



A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

PUBLISHED BY
MITCHELL BROS. COMPANY,
(INCORPORATED.)

VOL. IX.

CHICAGO, ILLINOIS, APRIL 15, 1891.

No. 10.

SUBSCRIPTION PRICE,
ONE DOLLAR PER ANNUM.

NEW ELEVATOR AT RICHFORD, VT.

Transfer elevators at the terminal points of the different railroads are increasing in number. The transfer elevator illustrated herewith was recently completed at Richford, Vt., for the Canadian Pacific and the Boston & Maine Railroads. The contract for the elevator called for the completion of the work in ninety days from the signing of the contract. The elevator was commenced the latter part of October and was finished early in February. Although the country in general experienced an open winter, the northern section of Vermont, where Richford lies, had one of the most severe winters ever known. For days the temperature was in the neighborhood of 30 degrees below zero and was as low as 40 degrees below. In spite of the cold weather the work was continued, not a day being lost. Simpson & Robinson, the well-known architects and elevator builders of Minneapolis, who make a specialty of time contracts, built and equipped the house and turned it over to the owners on the date specified in contract.

Six receiving legs are equipped with a pair of steam shovels each, and have a combined capacity of 48,000 bushels. The daily handling capacity is 300 cars.

This elevator is 100x180 and 151 feet in height and has a capacity of 750,000 bushels. The steam plant consists of a brick engine and boiler room 36x42 feet with smoke stack 133 feet high. The engine is a Reynolds-Corliss of 200-horse power furnished by E. P. Allis & Co. of Milwaukee, Wis. There are three steel boilers, made from the well known Juniata Fire Box Steel.

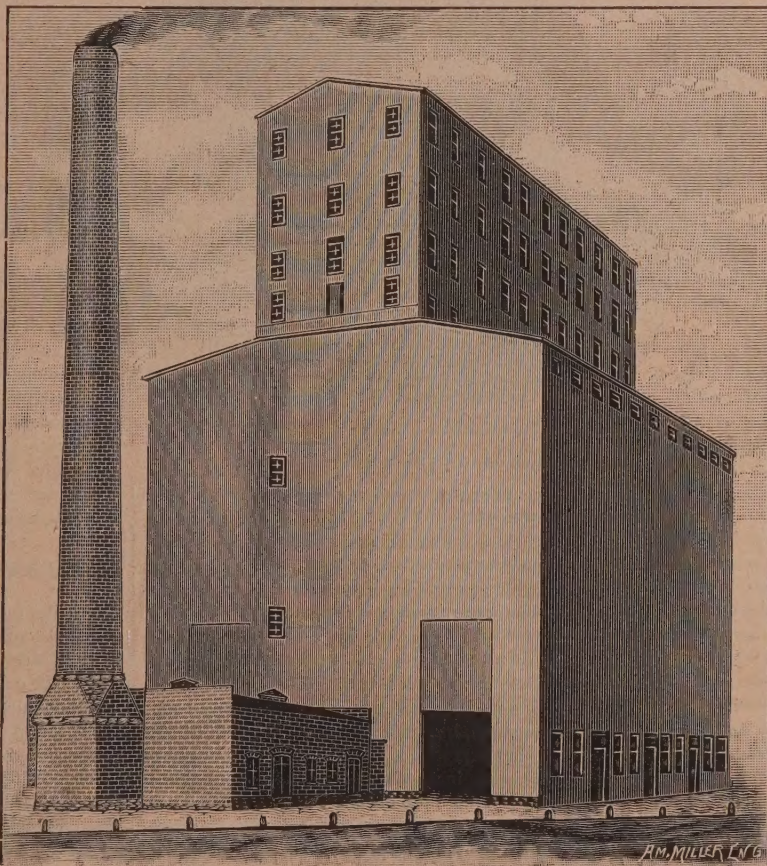
All the scales used are the Fairbanks of 1,000 bushels' capacity each, provided with the patent check beam.

The elevator is lighted throughout by electricity—150 light dynamo being provided for the purpose. Fire protection is secured by a standpipe supplied from the town water-works, and by special duplex pumps put in solely for extinguishing fires.

D. A. Robinson personally superintended the work. The elevator is fitted with all the latest and most improved machinery for handling grain. It is provided with Simpson & Robinson's Patent Distributing Spouts (a description of which appears elsewhere in this issue), coolers and dryers. An effective arrangement of suction fans keeps the house clean and free from dust. A special feature is

the absence of all driving belts, rope transmission being used throughout, and all movements are governed by friction clutches, so that any part of the machinery can be stopped instantly without interference with other parts.

This elevator is considered one of the most perfect ever built, and Simpson & Robinson have availed themselves of the opportunity to carry out their own special system



TRANSFER ELEVATOR AT RICHFORD, VT.

and the owners realize that the arrangement is such that they can handle the business at a much less outlay for labor than was anticipated. Mr. P. A. Peterson, chief engineer of the Canadian Pacific Construction Department, carefully inspected and accepted the elevator on behalf of his company, and expressed himself as highly gratified.

All cars loaded with flaxseed in Chicago are lined with cheese cloth by the flax inspectors.

SAMPLING WHEAT.

There is difference of opinion among the grain men, handling sample wheat here, respecting the best method of procuring the samples from cars. The way it is done is to leave the cars open to be entered by any parties interested in the grain contained therein, and samples are procured by the receiver if it does not go direct to the elevator or other place of unloading, and other samples are taken by buyers.

More or less wheat has been stolen from the open cars and the plan of leaving them unsealed and sometimes with open doors has been charged with responsibility for numerous shortages in quantity, when the cars are finally unloaded. A plan that has received some favorable indorsements is for the state to do the work of sampling as well as of inspecting, and reseal the cars, which are not to be opened again until they arrive at the place for unloading.

Against the plan there are some of the largest receivers, who say the question of a metallic strip on a car door, to protect the grain, is of no other use than to keep out the small boy whose pilfering in the aggregate is too trifling to be considered, when it comes to a matter of so much importance to the Minneapolis grain interests.

A great many reasons are urged why the plan would not be the best. One is that the sample so obtained might not be a correct sample. They say grades are often wrong and samples heedlessly taken would bring no end of confusion. They further insist that as the buyers would have to accept such samples as final, in practice, it would reduce the value of grain, for there would be greater risk and to put the buyer more in the dark as to quality would entail a bigger margin to cover the extra risk he would assume. Samples then would be uncertain as grades are they say. As samples are partly

to protect seller and buyer against irregular grading, they urge that one of the chief advantages of a sample market would be destroyed, for the sample taken might be the very parcel that gave the wrong grade—that it would confirm an error instead of correcting one.—*Minneapolis Record.*

About 16,000,000 bushels of grain, mostly wheat, has been exported from the Canadian Northwest. This is a little more than seven-eighths of the last year's crop

TESTING NO. 3 CORN FOR MOISTURE.

Chief Grain Inspector P. Bird Price of Chicago when questioned recently regarding the inspection of corn and the amount of moisture in the last crop said:

"During the month of March, 1891, I made a series of experiments similar to those made in 1888, and under exactly the same conditions. The experiments were made with No. 3 corn exclusively and the result proved that there is a larger percentage of moisture in the 3 corn this year than in 1888.

"Then the 3 corn averaged 5.6 per cent., this year 6.16 per cent., while the extreme upper and lower ranges were practically the same. When the fact that one per cent. of moisture in the corn represents 35 gallons of water in a 500-bushel car, is given due weight the difference between the average of 1888 and 1891 becomes quite important and proves conclusively that there has at least been no 'tightening up' of the grade since then."

This same question came up several years ago and Inspector Price then made the experiments referred to. In his annual report to the commission that year he said:

"Differences of opinion between the inspectors and the receivers of grain arise more frequently in the inspection of corn than in that of all the other grains together, and it is safe to say that in nine-tenths of the cases these differences hinge upon the definition of the word 'dry' as used in the rules.

"More than half of all the appeals from the decisions of the inspectors take their rise in the differing opinions as to what constitutes 'dry' corn.

"In former years, before the practice of shelling corn during its first winter had attained its present proportions, and when most of the corn was cribbed until spring and allowed to dry upon the cob, as Nature intended, the question of defining the word 'dry' was of relatively small importance; to-day it is the most critical and difficult one with which the department has to deal.

"In dealing practically with this question the department has always been governed by a regular, fixed standard to which it has adhered, with fairly uniform results, for seventeen years; a standard which the inspectors thoroughly understand, and about which there is rarely any difference of opinion between them; but it has never been formulated, and has been preserved only by a careful training of the senses, of the judgment and the perception of the individual inspector. In fact, it can only be approximately stated, at the best; and is not, in the very nature of things, capable of definite formulation, since some varieties of corn will be safe with a percentage of moisture that would be dangerous in others.

"With a view, however, of attaching as much precision as possible to our definition of the word 'dry,' and of affording to interested parties a means of testing the uniformity with which we adhere to our standard, I instituted a series of experiments in March and April last—the results of which are given below—for the purpose of determining as nearly as possible the amount of moisture contained in corn ordinarily graded No. 3 by the department, and in the 'line' corn upon which the Committee of Appeals was called to act. In every case the grain was brought from the tracks or elevators and weighed immediately upon its arrival. Then it was set up in ordinary cotton sample bags and allowed to stand for ten days in the sample room at a temperature of about 70 degrees Fahrenheit, when it was again carefully weighed and the results recorded. The bags containing these samples were accurately numbered and dated, and every precaution was taken to preserve exactly the same conditions in each case.

"Of the samples obtained 111 were from the tracks and elevators, and 174 were brought in by the Committee of Appeals.

"Of the work of the inspectors,

"Eighty-eight samples of 2 corn shrunk on the average 3.3 per cent.

"Twenty-three samples of 3 corn shrunk on the average 5.6 per cent.

"Of the work of the committee,

"Ninety-nine samples of 2 corn shrunk 4 per cent.

"Seventy-five samples of 3 corn shrunk 4.8 per cent.

"The shrinkage of samples taken from the elevators March 9 was, on 2 corn 2.5 per cent. and on 3 corn 5.6 per cent., while the shrinkage from a second lot taken from the elevators April 2 was, on 2 corn 3.1 per cent. and

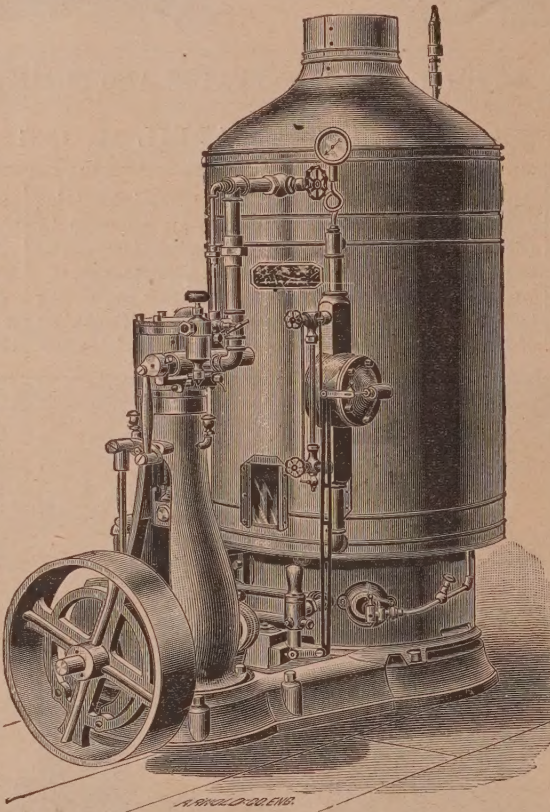
on 3 corn 6 per cent. This difference was caused, mainly, by the fact that the first lot contained some old corn while the last one did not.

"The samples furnished by the Committee of Appeals were exclusively of the new crop and 'winter shelled' corn, and that taken from the tracks and elevators was so with few exceptions.

"While in some instances other considerations than condition have entered into the grading of the samples referred to, I think the inference may be fairly drawn that corn that will lose from 3 to 4 per cent. of its weight in the time and under the circumstances above named (assuming that its quality is such as to entitle it to the grade of No. 2 independently of its condition), may be regarded as 'line' corn, about which an honest difference of opinion among disinterested experts may arise."

THE WESTINGHOUSE TROUBLES.

For several months past the daily press has constantly referred to what it called the financial troubles of the Westinghouse interests. While it is true that there are several industrial corporations which in one form or another bear the name of "Westinghouse," it is equally



AUTOMATIC ENGINE AND SAFETY BOILER.

true that the "financial troubles" among these companies have been confined to what is known as The Westinghouse Electric and Manufacturing Company, or, in other words, to that company whose business consists in making and vending electrical apparatus.

The Westinghouse Machine Company, for instance, whose business consists in making and selling, through the medium of its agents in every part of the civilized world, its well-known "Westinghouse Engines" (and a new advertisement from which company appears elsewhere in this paper), has had no "financial trouble," and to use a current expression, is "not in it!" Instead of curtailing its operations, this old reliable institution is still further increasing its capacity as rapidly and as much as it can. New tool and store rooms are just approaching completion, and it is hoped by the management, during the coming spring or summer, to be able to add complete new erecting and testing shops fitted with large power cranes and all modern improvements, and which shops will have a producing capacity twice as great as the present ones. To those in want of steam engines, as well as to those interested in the development, progress and enterprise of American manufacture, we suggest a careful perusal of the advertisement of The Westinghouse Machine Company, which appears elsewhere in this issue.

Thirty-four firms operate grain elevators in Chicago, giving employment to 510 men and fourteen women.

THE RACINE AUTOMATIC ENGINE AND SAFETY BOILER.

A small engine that has an automatic governor, as perfect in operation, as close in regulation, as economical in the use of steam and fuel as the largest and most modern built engines—such an engine has long been desired by steam users requiring small power, and such a one is illustrated herewith.

The valve is the well known Corliss type, quick and prompt in action, cutting off at varied stroke according to load, using the steam expansively, thereby making a saving of 30 per cent. in fuel over the ordinary throttle valve engines. The manufacturers claim that the Racine Automatic possesses all these valuable qualities, and in addition, is extremely simple in construction, having as few working parts as consistent with the performance of duty required. It is highly finished throughout, and all wearing surfaces are amply large and provided with the devices for adjustment to take up the natural wear.

They are manufactured in sizes from 1 to 15 horse power, and can be furnished separately or combined with boiler on neat cast iron base.

The boiler is what is known as the Marine Porcupine type, and is absolutely non-explosive. The body or center is of heavy hydraulic pipe, which is tapped and threaded, and short tubes with welded ends are screwed into same.

The worst possible accident which could result from carelessness would be the opening or splitting of one of these small tubes, in which event the water and steam would be admitted to the fire box and immediately extinguish the fire. As an extra precaution a fusible plug is placed in one of the tubes at the water line. A casing of heavy sheet iron incloses these tubes, which is wrapped with asbestos, and being encased with Russian iron gives a very handsome and finished appearance. These boilers are no experiment. Large numbers are in use throughout the East, and especially on small yachts, and in this service must pass the rigid government inspection. They are tested at 300 pounds' hydraulic pressure.

Either oil or coal may be used for fuel with these boilers. When oil is used the supply is regulated automatically, no more being admitted than is consumed. It is introduced into the fire box in the form of a spray by use of a jet of steam, which, coming in contact with the oil, atomizes it. This is an ingenious and simple device, is absolutely safe, and very economical.

The water supply is also automatically regulated by float, which opens and closes the supply valve as needed. The entire outfit is neat in design, compact and handsomely finished, and looks more like an ornament than a steam engine. These engines are adapted for all small plants, and especially for running elevators, isolated electric light plants, factories, printing offices, and for any service where an engine from 1 to 15 horse power is sufficient.

For particulars and prices address Racine Hardware Manufacturing Company, Racine, Wis.

ELEVATORS, PAST AND FUTURE.

A writer in a late issue of the *Evening Wisconsin* well says that "when Angus Smith built the first grain elevator in Milwaukee, some 5,000 bushels in capacity, the eyes of the community bulged out at the magnitude of the investment and venturesomeness of the investor." What would those same people have thought of the erection of five elevators in two years with a combined capacity of 8,500,000 bushels? This is the record of the city of Superior, Wis. And this is only the beginning. Every year large additions will be necessary, for not only the wheat and oats of Minnesota, North and South Dakota, Montana and Manitoba, but the corn of Iowa, Nebraska and Kansas is already being brought here in immense quantities. And as the millions of acres of the now unimproved lands throughout the West and Northwest are made to yield their quota of grain and other products, what, indeed, "may not be predicted of a point which by geographical necessity is to handle the products of a region so vast."—*Commercial Record*.

Seeding in the Northwest was commenced some time ago. Last year the farmers commenced earlier, but had to suspend operations on account of a cold spell.

CITY OF CHICAGO GRAIN ELEVATORS.

Sixteen months ago the securities of the City of Chicago Grain Elevators (Limited) were offered for public subscription. It was just before the day of international subscriptions to American industries, and most of the securities were offered in London. They consisted of £450,000 of stock and £500,000 6 per cent. first mortgage debenture bonds. The stock was all placed in London, but nearly or quite all of the debentures, says the *Chicago Tribune*, remained in Chicago. From that time until last week it is doubtful if there has been a sale made of these bonds. There has at least been so little heard of them that they were almost forgotten except by the holders. Last week a Chicago investment company advertised that they would buy or sell the bonds, and it is understood that they have received a great many inquiries. The price fixed was about 70 bid and 73 asked, and that is the first record of anything like a market price.

The selling at such a price of a 6 per cent. mortgage bond, secured on such prominent property as the leading grain elevators of Chicago, is notable; and especially notable when one is reminded of the recent date of the prospectus under which these bonds were floated and of the glowing promises that prospectus held out. In view of the present situation of affairs holders who are now tempted by the promises of profits that are made in prospectuses that are strewn over with the glamor of "£" signs, might with advantage recall some of the promises under which the City of Chicago Grain Elevators (Limited) securities were put forth. The enterprise did not lack prominent men to give it standing. The local committee of management consisted of H. W. Rogers, P. B. Weare, W. A. Hammond and H. C. Wicker.

The promoters showed the possession of genius even outranking that of an average calculator of profits in an English prospectus. On a statement covering eight years they figured out average annual profits of \$405,000, although an analysis in detail of their statement showed that profits had been falling off until in 1888 they were but \$139,000, or considerably less than the amount required to meet the interest on the debentures. Such a small matter as that did not annoy them, however. They took their statement of average annual profits, and adding to that \$150,000 which Mr. B. R. De Young had assured them, with much confidence, the profits might easily be increased to, they figured out that, after providing interest on the debentures and buying bonds for the sinking fund, there would be left about 17 per cent. on the ordinary shares.

Some of the positive statements from Mr. De Young that the prospectus contains were particularly interesting. He said: "It can with perfect safety be said that the future profits will not be less than the past profits; and it is perfectly apparent that they may be increased by the use of ordinary business skill and energy by the sum of \$150,000 to \$200,000 per annum." Unfortunately for the subscribers the statements of Mr. De Young and the promises of the promoters have not been fulfilled.

The promoters said they were informed that the unsatisfactory result for 1888 was due to the failure of the maize crop. The decreasing earnings which were shown that year and the year before, and which have continued to be shown, are by no means to be altogether accounted for by the failure of the maize crop or the failure of any other crop. The trouble is rather with the abundance of the crop of elevators. The elevators in Chicago have a capacity of some 30,000,000 bushels. The total stock of grain in store is at present less than 8,000,000 bushels. That is the trouble with the elevator profits. There are too many elevators for the business. The capacity of the elevators has been increasing while the quantity of grain to be stored has been steadily decreasing. A great amount of grain is now "billed through" and is sold on the Board of Trade, inspected, and shipped East without getting into an elevator at all. There has been a steadily decreasing amount of grain in store since 1886. In February, 1886, there were 14,600,000 bushels of wheat in store and afloat in Chicago. There were over 1,000,000 less the following year, and in 1888 the amount had dropped to 5,500,000 bushels. In 1889 the decrease was over 1,000,000 bushels, but in 1890 there was an increase of about

800,000 bushels, and the stock at present shows a further increase of a little less than 1,500,000 bushels. The amount of corn now in store is but a mere bagatelle. The large profits as shown by the City of Chicago Grain Elevators' prospectus, were in 1886 and 1887. Those two years were the only ones in the eight for which figures were given that the profits reached the annual average of \$405,000, with the exception of 1884. In 1886 there were 14,600,000 bushels of wheat in store, and in 1887 13,600,000 bushels, against considerably less than half of that amount at present. In 1886 there were 2,800,000 bushels of corn in store and in 1887 7,000,000. With these figures in view one does not have to search far for reasons for the failure by the elevator companies to make promised profits.

In their efforts to get a return on the capitalization it is said that the managers of the property have been heavy operators in the grain market. A large amount of money was borrowed, estimated by some to be as much as £500,000, and with this cash grain was bought in the fall and stored, and sold for delivery in the spring. It is charged by some of the people interested in the securities that these operations were not confined to buying for cash and immediately selling for future delivery, so as to remove the elements of speculation from the transaction, but that such profits as are shown may in good part be made up



WEST SHORE ELEVATOR AT WEEHAWKEN, N. J.

from lucky speculation instead of representing a solid earning capacity of the property.

THE WHEAT CROP IN MEASURED BUSHELS.

Statistician Dodge estimates the annual spring wheat crop of the country in commercial bushels of 60 pounds for the past three years as follows: In 1890, 136,061,636 bushels, against 151,441,952 bushels in 1889, and 125,778,661 bushels in 1888. The crop of last year was 15,380,289 bushels less than in 1889, and 10,287,975 bushels larger than in 1888. The winter wheat crop of 1890, in measured bushels, was 244,854,267 bushels, against 320,018,711 bushels in 1889, and 265,644,121 bushels in 1888. The crop of last year was 76,164,444 bushels less than the crop of 1889, and 10,879,854 bushels less than the crop of 1888.

The following table shows the crops of the principal spring and winter wheat states in measured bushels for the past three years.

	1890.	1889.	1888.
Wisconsin	12,375,720	16,231,292	12,700,417
Minnesota	36,438,200	43,562,000	25,728,773
Iowa	18,088,950	19,726,582	21,776,400
Nebraska	14,294,000	16,005,600	13,299,000
The Dakotas	37,380,175	39,916,500	33,915,433
Washington	8,071,000	6,884,600	8,855,900
Ohio	27,985,067	35,451,842	27,030,542
Michigan	19,426,375	22,523,550	23,026,833
Indiana	26,531,600	39,333,585	27,194,392
Illinois	17,555,633	36,366,727	31,710,420
Missouri	17,050,067	20,019,830	17,762,933
Kansas	27,114,192	29,881,600	14,975,800
California	28,635,650	42,540,538	27,976,817
Oregon	12,865,000	13,460,850	14,378,273
New York	8,223,600	8,601,603	8,952,155
Pennsylvania	15,647,775	16,173,880	18,175,267

NEW ELEVATOR AT WEEHAWKEN, N. J.

Ground is becoming such an expensive article on Manhattan Island that few new grain elevators are likely to be erected in New York City. Ground on the Jersey shore is less expensive and is better suited for elevators intended to transfer grain from cars to vessels. It is reported that several elevators are now in course of construction on Staten Island, and a large elevator has just been completed at Weehawken, N. J., by the West Shore Railroad.

This elevator is just across the river from New York City, and is 302 feet long, 100 feet wide and 150 feet high. It is built on a pier which extends 1,160 feet into the North River from Weehawken. Grain can be delivered to boats from each side of elevator.

Two tracks run through the building and out on the dock beyond; eight cars can stand on each track inside the elevator at a time. The grain is unloaded from the eight cars at the same time by steam shovels, and conveyed to the receiving scales at the top of the building by eight legs, after which it is distributed by spouts to storing bins, of which there are 187, having a total capacity of 1,200,000 bushels. Twelve shipping bins are on each side of the house into which the grain is run for loading lighters and vessels.

Besides the eight legs for unloading cars there are eight legs for conveying the grain from the bins to the shipping scales, by which delivery can be made from store simultaneously with the unloading of the cars. Each elevating leg has a capacity of 6,000 bushels per hour. The screening and blowing is done by four machines located on the scale floors in the upper part of the building.

The engine, a 750 horse power Corliss, is located at the west end of the building and propels the main shafting at the top of the house by means of a rubber belt 320 feet long and 48 inches wide. The scales used are the improved Fairbanks', fitted with the patent letter and figure combination to insure against wrong weighing.

CHANGE IN CHICAGO BARLEY GRADES.

The Illinois Railroad and Warehouse Commission have granted the change asked for in the barley grades at Chicago to take effect upon the new crop, but not upon the barley now in store. As amended, Rule 6 governing the inspection of barley, will read as follows:

No. 1 Barley—Shall be sound, plump, bright, clean and free from other grain.

No. 2 Barley—Shall be of healthy color, not sound and plump enough for No. 1, reasonably clean, and reasonably free from other grain.

No. 3 Barley—Shall include slightly shrunken and otherwise slightly damaged barley, not good enough for No. 2.

No. 4 Barley—Shall include all barley fit for malting purposes, not good enough for No. 3.

No. 5 Barley—Shall include all barley which is badly damaged, or from any cause unfit for malting purposes, except that barley which has been chemically treated shall not be graded at all.

Scotch Barley—The grades of Nos. 1, 2 and 3 Scotch barley shall correspond in all respects with the grades of Nos. 1, 2 and 3 barley, except that they shall be of the Scotch variety.

Bay Brewing Barley—The grades of Nos. 1, 2 and 3 Bay Brewing Barley shall conform in all respects to the grades of Nos. 1, 2 and 3 barley except that they shall be of the Bay Brewing variety grown in the territories and on the Pacific coast.

Chevalier Barley—The grades of Nos. 1, 2 and 3 Chevalier Barley shall conform in all respects to the grades of Nos. 1, 2 and 3 barley, except that they shall be of the Chevalier variety grown in the territories and on the Pacific coast.

At the present high price of corn and the cheapness of sugar, the manufacturers of glucose are having a hard time. Sugar is about as cheap as its substitute, and possesses more sweetening power. With cheap corn glucose might compete.

THE KANSAS GRAIN INSPECTION LAW.

The grain inspection and warehouse bill which prohibits Missouri grain inspectors from inspecting grain in Kansas elevators, has become a law in Kansas. Two years ago when the Missouri Legislature passed a very oppressive grain inspection law, the grain merchants in Kansas City, Mo., decided to handle their grain on Kansas soil. Several large elevators were built west of the state line, namely, the Peavey elevator, with a capacity of 1,200,000 bushels; the Rock Island, capacity 250,000; the Argentine, capacity 250,000, and the Santa Fe elevator, capacity 600,000 bushels. Although the grain men were instrumental in securing the location of these large elevators on Kansas soil, yet they insisted on having grain inspectors appointed by Missouri officials cross the river and inspect the grain. The Board of Trade requested the grain dealers to employ inspectors appointed by Kansas officials, but they refused to do so, hence the passage of the grain inspection bill.—*Modern Miller*.

SHORTAGES AT MINNEAPOLIS.

Of late a good deal of complaint has reached the office of the state weighmaster to the effect that a not inconsiderable amount of pilfering of grain was being done about the city. So great has this abuse become that correspondence has passed between Weighmaster Reese and the different grain men and organizations interested, and the matter has even gone so far as to be brought to the attention of Mayor Winston with a view to having the city take the necessary action that would lead to a correction of the evil. According to Mr. Reese the loss in the weight of a single car of wheat after it has reached the mill, has sometimes been as high as 1,000 pounds, and a common shortage is 400 or 500 pounds. This difference, there does not seem to be much doubt, has been abstracted from the car while standing in the elevator yards by people who make such depredations a business. From thence the wheat has been traced to feed stores of the city, where it was sold for a cent a pound, and afterward disposed of over the counter as chicken feed.

An examination of wheat in some of these stores, made by the state weighmaster, shows it to be good, clean wheat, but very much mixed as to grade, clearly indicating the source from whence it came. At first the shortages were laid at the door of the weighmaster's assistants, whose incompetency in weighing the cars was thus broadly intimated. But so regular and systematic were the thefts that this theory was cast aside and an investigation disclosed the true state of affairs. The cars in the outside yards of the city have suffered the most—those without the patrol limits in East Minneapolis, on the Hastings & Dakota branch of the Milwaukee in West Minneapolis, and on the Great Northern tracks in the northern and western parts of the city. It is supposed that the depredations are carried on principally at night, and are so slyly done as to render detection well nigh impossible. How to reach at the root of the difficulty has accordingly become somewhat of a problem.

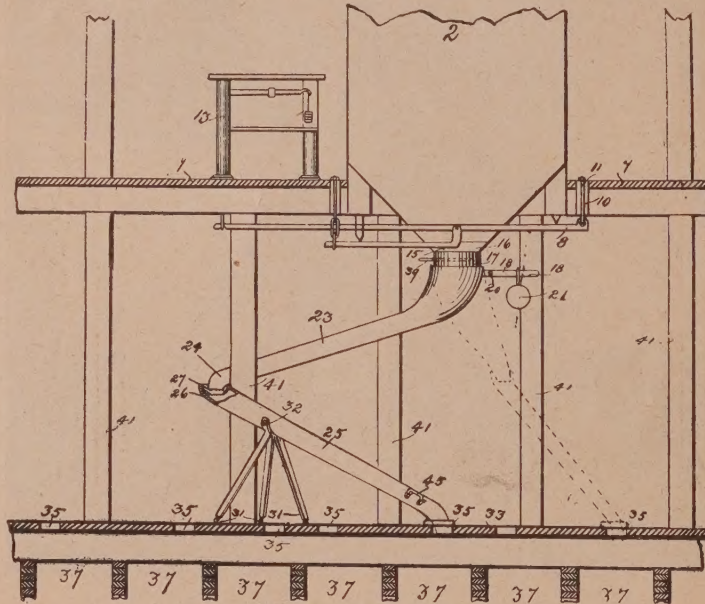
A step in this direction has been taken by Weighmaster Reese, who has recently framed a bill for introduction into the legislature making loitering around railroad yards a misdemeanor. The provisions of the bill are as follows: "Any person who shall in the day or night time, loiter about or go upon or into any railroad yard in this state, or to or near any loaded car standing in such railroad yard, or on any main or side track, or upon, in or near such railroad yard, without having business in such yard, or at or near such car, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine not exceeding \$100, or by imprisonment not to exceed 90 days."

Another plan that has received more or less approval, is for the state to do the work of sampling as well as of inspecting the cars, and to resal the cars afterward, which are not to be opened again until they arrive at the mill, or the place of unloading. As it is now, some one, either the receiver or the buyer, both of whom obtain samples from the car, leaves the door open, and it consequently becomes an easy matter for thieving to occur. As against

the plan of having the state do the sampling, however, it is claimed that the samples so obtained might not be correct ones, no more than grades are entirely correct. Furthermore, it is contended that inasmuch as the buyers would have to accept such samples as final, the plan would conduce to greater risks and put the buyer in more uncertainty as to the quality of wheat he is buying, and thus reduce the value of the grain by necessitating a greater margin to cover the extra risk. Indeed, the object of samples, in past, is to protect buyers and sellers against irregular grading. In any event the subject is a momentous one, and the sooner the annoyance that now confronts the grain trade is remedied the better it will be for all concerned. There are many millers who think the pilfering is too small-boyish to be worthy of notice, but State Weighmaster Reese, who has given the matter no little attention, is firm in the belief that it is quite serious.—*Northwestern Miller, Minneapolis*.

A DISTRIBUTING GRAIN SPOUT.

A new grain spout was recently patented by John Simpson of Minneapolis of the well-known firm of elevator builders and architects, Simpson & Robinson. The grain conductor or spouts herewith illustrated is very easily operated. When no grain is passing through spout 23 the two sections of spouting do not touch each other



A DISTRIBUTING GRAIN SPOUT.

and thereby interfere with weighing. By pulling the slide 39 the grain passes from scale hopper 2 into the spout 23, thus adding weight to the spout and it overbalances ball 21 on arm 18, which is attached to spout 23 to balance the end of spout 23 into the end of the lower spout at 27. The lower end of the lower spout rests over a trap 35 in the floor above the bins 37, making the spout dust-tight from hopper to bin. The upper spout can be revolved about on a casting 16 on the bottom of hopper so as to miss posts. The lower spout rests upon a tripod and can be made to connect with many different bins. As every hopper scale should be connected with a number of bins, much spouting is saved by the use of this new spout.

The imports of linseed into the United States in January, 1891, were 165,396 bushels, against 197,372 bushels in January last year. The linseed imported during the seven months immediately preceding Feb. 1, 1890, amounted to 1,160,532 bushels worth \$1,251,869, against 1,007,399 bushels worth \$1,194,323, in the same period of 1889-90.

Of the many experimental stations conducted by the Department of Agriculture of the United States, thirty-nine are studying crops as to yield composition, etc.; thirty-three are working in botany, especially in fungous diseases, testing the seeds; twenty-five are investigating injurious insects. When this country becomes so densely populated that every acre of ground possible must be utilized for the production of food, the Department of Agriculture will have reduced farming to an exact science, and the great work done by the department will be of the highest value to millions of producers and consumers.

"DIAMOND JOE" REYNOLDS.

Many interesting stories are told about "Diamond Joe," the great grain merchant whose death was noted in our last issue.

When he started in the grain business in Chicago he adopted as his trade mark, to be branded on his grain sacks, a diamond. Discovering that the mark was very common, he added to it the abbreviation of his first name, "Joe." Later he added to the brand again, this time the words "stolen from," so that when any of his grain strayed into other hands the possessor was very likely to be in a hurry to get rid of the property, which told all who saw it that it was "Stolen from Diamond Joe." As the nickname became generally known, Mr. Reynolds became very proud of it, and of late years signed almost all his letters in that way. When he established his line of steamers from St. Louis to St. Paul he called it "The Diamond Joe" line. This he stamped upon his stationery, on his steamboats, warehouses, grain bags and offices until people began to speak of him as "Diamond Joe" Reynolds, which they soon shortened to "Diamond Joe."

Many years ago Mr. Reynolds invited a party of ladies to take a trip down the river on this line, and when they reached the town where they were to take the train for Chicago, Mr. Reynolds said: "I am very sorry, ladies, that I cannot go back to Chicago with you, but if you will consent to pay me a very great compliment I'll promise that you shall reach your home without any trouble." In those days all the ladies wore cuffs turning over their dress sleeves, and pointing to these he said: "If you will allow me to have branded on your cuffs 'Diamond Joe' you will be passed on the train without a request for tickets." The ladies consented, were branded and the conductor of the train looked at the brands smilingly and asked for no fare.

He took a great interest in all of his employees. It was a favorite—one might almost say, pastime—of his to build homes for his trusted employees, being very strict about binding them to pay him for the structures, and then surprise such persons with the gift of a deed, generally accompanied with the admonition to "tend to your business." He gave a great deal of money for charitable purposes, but was in constant fear that his benevolence would be discovered, seemingly not wishing his gifts to be known. There are many men to-day occupying elevated positions in the business world, who owe their prosperity to Mr. Reynolds. He never lost an

opportunity to advance a worthy young man, and always sought to hide his kindness beneath an indifferent exterior.

Some years ago he became ill, and with a friend went down to Hot Springs, Ark. There was no railroad at the time, and after jolting over sixteen or eighteen miles of rough road in a stage Mr. Reynolds decided that there should be a railroad in that locality. He hunted up an old charter and built the Hot Springs Railroad. While it was in process of construction a rather amusing incident occurred. The magnate was on the scene, superintending the construction, and tiring of the hotel—a high-priced one—where he was stopping, he determined to look for new lodgings. Accordingly he strolled out one evening and came across a very modest little cottage with a boarding-house sign out. Mr. Reynolds inquired for board, but was informed that the house was not quite ready for guests. "Well, just let me come and stay with you, anyway," said "Diamond Joe." "You have to eat until you get your house ready, and I'll take whatever you choose to feed me." "What's your business?" asked the proprietor. "Oh, I am digging post holes for that railroad that's coming through here, and I want to get some nice, quiet place to stop." He was accordingly taken in, and it was not for several days that the boarding-house keeper discovered that the post-hole digger and the railroad owner were one and the same man. This shows the unostentatious character of the man.

He was a man of big ideas and was never scared away from a scheme by reason of its magnitude. It is reported that he sustained the loss of \$1,000,000 in a grain deal without wincing, and that more than one of his giant mining operations cost him hundreds of thousands in losses. He was shrewd, cool and calculating, and the result of his life work shows a large fortune.

DUMPS AND EAR CORN ELEVATORS.

BY R. JAMES ABERNATHEY

A correspondent to this journal asks for information about dumps and ear corn elevators, and as other new readers may also be interested in the matter, a brief article on the subject may prove of value.

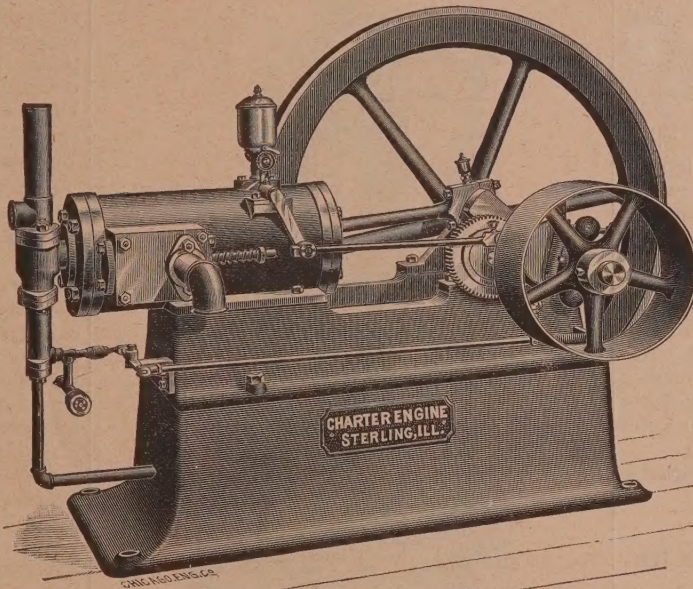
Platform dumps work in the same way as rail dumps and where used are built in the elevator, there being no special manufacturers of such dumps so far as is known to the writer. In place of the rails a solid platform is made large enough to sustain the largest wagons. This platform is hung on a pivot shaft the same as are the rails, and sustained at the dumping end with movable chucks, the same as the rails. When the chucks are tripped to dump a load the whole platform goes down and the load of grain rolls out. Such dumps are cumbersome, not so convenient as the common rail dump, besides accidents are more liable to occur. Another drawback is that with a dump of that kind but a single dump hopper can be used for each dump, whereas with the rails one dump can be utilized for filling two hoppers, which is important in small elevators in which there is not sufficient length of driveway to get in two dumps. With a single dump great inconvenience would be incurred when two or more kinds of grain are being delivered by farmers at the same time. For instance, if a large quantity of corn was coming in, keeping the sheller and its dump busy and alternately a load of wheat great difficulty would be experienced and much time lost in taking care of the wheat. If, however, there are two dump hoppers the load of wheat can take its turn with the loads of corn, be dumped in a moment and quickly out of the way without seriously interfering with the continuous train of corn. The load of wheat would soon be elevated into a bin leaving the dump hopper empty and should there be a load of oats following, or any other kind of loose grain, it could be taken care of in the same manner without causing any serious delay in the general operations of the house.

It is not to be inferred that it is impossible to make a platform dump with a double hopper, but that it is quite awkward to do so, while with the rail dump it is quite a simple arrangement. With rail dumps the driveway is made solid and immovable except the rails. Between the tail ends of the rails a strongly hinged hatchway or trap door is made that is never opened until after the team has passed it and the wagon is fixed on the rails ready for dumping. Under the center of the hatchway is a partition that divides the bin into two parts and in the partition is hinged a flapper valve gate which swings both ways, and when in place forms a chute that directs the grain into the one or the other of the two hoppers as may be desired. If engaged in shelling corn and a load of wheat or other grain is drawn on the platform, the operator raises the hatch, throws the flapper the other way and it is ready to go. When the wheat is dumped the valve is thrown back and all is ready to proceed with the corn shelling again.

There is a point right here that parties designing to build small elevators should consider well. There is, of course, always a disposition to cheapen the first cost of building elevators and in doing that an effort is frequently made to get along with one stand of elevators. Those are put in for taking the corn from the sheller, and being of large capacity the intention is to fill the wheat hopper and then elevate it with the corn elevator between corn shelling spells or after the day's corn shelling is over. Now, where there is not very much grain of any kind to handle that plan may do, but it is very awkward at best; but where there is a great deal of grain to handle it will be found the most inconvenient arrangement possible, as it will be constantly interfering with regular work by stopping the sheller and detaining those who are delivering corn, thus making trouble and causing a loss of time on all sides. All elevators should be prepared to elevate grain as fast as delivered to the dump hopper, because different kinds might follow each other in rapid succession, and in order to do that there must be a stand of elevators for each dump hopper and the saving in first cost by leaving out one stand of elevators will never prove

a fair compensation for the loss of time and the annoyance it afterward occasions.

As to elevators for elevating ear corn, very many are in use. It is just as easy to elevate ear corn as corn and cobs, or in fact any other kind of material, if properly fixed for it. The buckets for ear corn must be large, not less than sixteen inches wide, sixteen by eight being a good size for moderate work. Of course, the size of the buckets above that given will depend on the amount of work to be done, running from sixteen inches up to whatever size may be required for easily doing the work. The opening into the boot of the elevator for the admission of the corn must be of ample proportions to prevent lodging, and the direction must be such as to drop the ears of corn directly into the buckets. In no case must it be allowed to fall to the bottom of the boot, because, as can readily be seen, the buckets will be unable to scoop it up as they would loose grain and a choke up would soon result and possibly a bad break of some kind. The ear corn elevator is very valuable for storing ear corn in upper parts of the building. By running an ear corn elevator the full height of the building cribs of large size can be filled by using distributing spouts. In that way the work of cribbing corn is facilitated, being done much quicker and with less hard work. Such cribs should be provided with drag belts leading to the sheller so that they can be automatically emptied when the time comes



THE CHARTER GAS ENGINE.

for shelling out. Again the ear corn elevator can be used to good advantage in supplying the sheller from the dump where the ground is flat and difficulty is experienced in making the pit deep, on account of water. In such cases the sheller can be brought up to ground level with a short stand of elevators to connect it with the dump discharge. The same care must be exercised in getting the corn into the boot of the elevator as in other cases, so as to avoid mishaps. That kind of a device for feeding the sheller is most excellent and can be used to good advantage in a great many plans, and especially on low ground.

ECONOMIC DISCUSSIONS.

So much remedial legislation is talked of and the ideas back of much of it are so new and crude, says the *Record* of Minneapolis, that when any legislative body adjourns this season there is an expression of public relief. There are advocated new forms of taxation, new interest laws, restrictive laws for government of corporations, new style finances, peculiar forms of government loans, not to mention the numberless interests that are reaching out to the treasury. There is one idea that runs through it all, and that is that the government can create wealth by the use of its legislative fiat, and that the main thing is to get favorable action on the new projects to make things near perfect as human contrivances can be. But agitation brings education and enlargement of ideas that will in the end bear good fruit. Stagnation and stolidity do not encourage reforms. Discussions do. There is even hope in them of the enlargement of better economic principles.

THE CHARTER GAS ENGINE.

In all lines of business, and in all parts of business management, men are seeking success by simplifying their methods and economizing and condensing in every way possible. All strive to do away with that which is not absolutely necessary. Many millers, however, do not adopt these principles in their power plant. Not because they are opposed to changes, but because they do not know of the many advantages to be gained.

The gas engine is without doubt the most economical and practical means of applying heat energy to the production of power. It admits of economy in space, fuel and labor. The force is produced in the cylinder, and it is claimed that the energy which is lost in making steam is saved. Neither is so much energy lost by condensation, friction and throttling. At one time these engines could be used only where gas was manufactured, but now the "Charter" made by the Charter Gas Engine Company of Sterling, Ill., can be used anywhere, as the products of petroleum can be used in the "Charter" thereby saving the cost of converting into gas and the energy lost in such change.

The "Charter" Gas Engine, of which we herewith give a cut, consists, besides the usual base, of a cylinder, piston, connecting rod, crank shaft and flywheel. The principle of operation and development of power is as follows:

On the first out stroke of the piston a diluted mixture of gasoline and air is drawn into the cylinder through a check-valve on head of cylinder; said check-valve opens during the suction stroke, and at the end it seats itself and is closed during the in-stroke of piston. The mixture previously drawn into the cylinder (and which has the same properties as manufactured gas and air mixed), is compressed into the space between head of cylinder and the piston during its in-stroke. The carbon of the mixture is ignited by the safest, most reliable and simple device possible (a short iron tube closed at outer end and communicating with interior of cylinder; inclosed by a chimney and heated by a Bunsen burner); and the air being expanded by the heat evolved an impulse is given to the piston. When the piston has reached its second out-stroke the exhaust is opened, and remains open during the second in-stroke of the piston, and the products of combustion are expelled into the exhaust pot, and from it conducted to outer air.

The governor, which is within the pulley, gives only as much gasoline, and at the right time, as is needed to do the work, consequently the amount used depends on the work done.

When less than full work is done, only as many charges of gasoline are admitted and ignited as are needed to keep up the regular speed of engine. When this speed is slightly exceeded the governor does not give gasoline, but when the engine is working to its full capacity the governor gives a charge at each stroke. A steady motion under part or full load is obtained by the momentum of a heavy flywheel.

The oilers are automatic. The engine is simple, has few moving parts, has no small or delicate parts, and hardly ever gets out of order. The expense for gasoline is about one cent an hour to each indicated horse power.

The "Charter" has many advantages. It is easily started, handled and controlled, and it only requires a few minutes' time each day to clean it and fill the oilers. No engineer is required, no boilers, no feed pump, no fire, no smoke or gauges. It is ready for use any minute, day or night, and the minute it stops the expense stops. The first cost is not more than a first-class steam plant. The material and workmanship are the best, and each "Charter" is guaranteed for one year.

The United States imported 6,541,000 pounds of rice, 4,984,164 pounds rice flour, meal, and broken rice, in January, 1891, against 4,734,833 pounds of rice, 3,587,608 pounds of rice flour, meal, and broken rice, during January last year. During the seven months preceding Feb 1, 1891, 37,725,563 pounds rice valued at \$858,589, and 42,089,456 pounds rice flour, meal, and broken rice valued at \$733,069, were imported, against 26,929,694 pounds rice valued at \$532,871, and 31,437,810 pounds rice flour, meal, and broken rice valued at \$529,095, for the corresponding months of 1889-90.

AN AUTOMATIC BAGGING SCALE.

The Automatic Bagging Scale, of which we herewith give an illustration, is for bagging grain, meal, rice and other granulated materials. It is a semi-automatic machine, arranged to weigh directly into the bag, which is supported on a platform suspended from the scale-beam. The valve mechanism for cutting off the flow of grain or other material, and the appliances for accurately determining the weight are the same in the bagging scale as in the corresponding size of the automatic scale.

The bag is set upon a platform, adjustable in height on the hangers to accommodate the scale to the different sizes of bags up to 42 inches in length. The top of the bag is held in place by means of hooks, in the same manner as by the old method of bagging from a spout.

In operating the scale, the bag being first put in place, the machine is started by throwing up a starting lever provided for that purpose, by which the valves are opened and the grain or other material allowed to flow into the bag in a full stream. When the load is nearly completed, the starting lever drops to an intermediate position, thereby causing the "catch-valve" to retain the "drip" in the small hopper carried on the upper ends of the hangers immediately under the valves.

The grain now flows slowly, or "drips" as if sprinkled from the hand, into the hopper until the load is fully completed, when the scale-beam passes below the poising point, the valves close and cut off the "drip," the starting lever drops to its lower position, thereby letting the "drip" out of the hopper into the bag and automatically stopping and locking the machine.

The operator now removes the filled bag, puts an empty bag in place and again throws up the starting lever as before. He also ties the removed bag while the next bag is being filled and weighed.

The machine is constructed to weigh 120 pounds or less at a time of any kind of grain and 100 pounds or less of meal, bran, etc. The capacity of the machine depends somewhat on the ability of the operator to place and take away the bags. Under average conditions, in filling bags with 100 pounds of corn meal or two bushels of wheat or other grain, about 100 bags per hour is considered a fair amount of work for one man. The machine occupies a floor space of 28x31 inches and stands six feet high.

Any further information can be obtained by addressing the Pratt & Whitney Company, Hartford, Conn.

TO AMEND THE ILLINOIS WAREHOUSE LAW.

Senator C. E. Fuller has introduced a bill in the Illinois Legislature providing for a change in the Illinois Warehouse Law. The bill as introduced is as follows:

For an act to amend section two (2) of an act entitled "An act to regulate public warehouses, and the warehousing and inspection of grain, and to give effect to article thirteen of the constitution of this state," approved April 25, 1871, in force July 1, 1871.

Section 1. Be it enacted by the people of the state of Illinois, represented in the General Assembly, that section two (2) of an act entitled "An act to regulate public warehouses, and the warehousing and inspection of grain, and to give effect to article thirteen of the constitution of this state," approved April 25, 1871, in force July 1, 1871, be, and the same is hereby amended as to read as follows:

Section 2. Public warehouses of class A shall embrace all warehouses, elevators and granaries in which grain is stored in bulk, and in which the grain of different owners is mixed together, or in which grain is stored in such a manner that the identity of different lots or parcels cannot be accurately preserved. Such warehouses, elevators or granaries being located in inspection districts which shall be established by the Board of Railroad and Warehouse Commissioners, so that each of such districts shall have within its limits a city or county whose warehouse and elevator capacity shall exceed 4,000,000 bushels of grain.

Public warehouses of class B shall embrace all other warehouses, elevators or granaries in which grain is stored in bulk, and in which the grain of different owners is mixed together.

Public warehouses of class C shall embrace all other warehouses or places where property of any kind is stored for a consideration.

The said Board of Railroad and Warehouse Commissioners may alter or enlarge the limits of any such inspection district whenever in their judgment the necessities of the case may require, and whenever the boundaries of any district are so changed or enlarged the chief inspector of grain and his assistants, and the warehouse registrar and his assistants of the old district, shall continue to hold and exercise the duties of the same offices respectively in the new district.

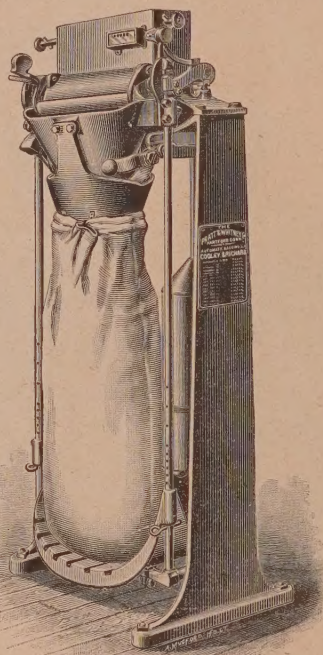
Whenever said Board of Railroad and Warehouse Commissioners shall establish a new inspection district, they shall at once notify the governor, who shall appoint a chief inspector of grain for said new district, who shall hold such office until his successor shall have been duly appointed and confirmed, and the said Board of Railroad and Warehouse Commissioners shall also immediately appoint a warehouse registrar and such assistants as they shall deem necessary for such new inspection district.

HEARING ON GRADES AT CHICAGO.

The Illinois Railroad and Warehouse Commission, which is now composed of I. N. Phillips, J. R. Wheeler and John R. Tanner, granted a hearing at Chicago March 26 to a number of Central Illinois corn shippers regarding the inspection of corn at Chicago. The shippers complained that the inspection of corn was entirely too rigid, and that much corn which was graded No. 3 should be graded No. 2.

F. M. Pratt of Decatur, said: "Corn is grading satisfactorily elsewhere, but not at Chicago. New Illinois corn grades at other points all right. Farmers expect us to pay near Chicago prices, but as our corn will not grade No. 2 we cannot do it. We sell by sample. When will the inspection department put this corn in No. 2 is what we want to know. Hot corn in the elevators would depreciate the market."

B. C. Beach of Champaign, Ill., said: "In all markets save Chicago our corn grades No. 2. It is not fair that we should be subjected to a more rigid grading at Chicago than anywhere else. It is the best and the driest crop of corn we have ever had, but it grades the poorest of any. Iowa corn is of inferior quality, but it grades the same. We shipped five cars to Chicago the present week of new corn, clean and dry enough to grade No. 2 anywhere,



AN AUTOMATIC BAGGING SCALE.

but it was graded No. 3. I know of a shipper who has not hedged for five years, and he makes the same complaint. A new grade would not be of any benefit unless it was a contract grade. Our corn is just as dry as it will be six months hence. We want to know when the grading will be changed and our corn will be admitted to No. 2."

Thos. Costello of Crocker & Co., Decatur, Ill.: "To-day corn is all grading the same while there is a decided difference in the quality. Ours is the finest corn we have ever had, but it is graded the same as corn of inferior quality. We all have corn in the crib, but as corn is not grading we are afraid to sell against it for future delivery. A new grade called No. 2 would not benefit country dealers."

James Templeton, Chicago: "Corn from a large section of Iowa is as good as any raised in Illinois. At least 75 per cent of Iowa corn is sold on through billing. There is no question that Illinois average corn is better than the average in Iowa, but much Iowa corn is excellent. I am not in harmony with the Chicago inspection department. Its interpretation of 'dry' is too severe. The inspectors in trying to be just to shippers are too careful. They do not consider corn is dry unless it is bone dry. With a little judgment and moderation, much corn that is now graded No. 3 would be graded No. 2. Chief Inspector Price is too afraid of allowing damp grain to go into store and heating. Chicago is the highest market in the country."

Wm. T. Baker, president of the Chicago Board of Trade: "If the speculative grade was made No. 4 country shippers would want all grain admitted to that grade. The tendency to lower the grade is too strong. Pressure

is always to lower the grade, and I have noticed evidences of a move in that direction. 'Dry' must mean dry, and not a certain per cent. of dryness. The definition of dry must be an absolute one, and not a variable one. Establish a grade for winter shelled corn and call it new No. 2. Buyers will know what they are buying. Growers would suffer because such corn would injure the market and depreciate the price of old No. 2. Chicago grades have been kept up, and to day we have the greatest and best market in the world. Illinois corn is of superb quality, but it should not be graded No. 2 until it is cured. At one time we had a multiplicity of grades, one of which was new No. 2. The corn received differed little in quality, so that grade was abolished. If we had such a grade now it could be traded in. I have recently examined many samples of corn in paper bags on 'Change. By placing bags in my hand I found that each had absorbed much moisture and some were quite damp. If you reduce the practice it will reduce the grade. If any corn was posted as being out of condition, it would depreciate the market price of all corn in this market. The stock of corn is very small and the country shippers are afraid of being squeezed. They hedge against everything. It is not fair for those who do not ship to this market to ask that our grades be lowered. If corn is often posted in this market it will ruin our market."

W. B. Newbegin of New Mound, Ill., said: "We have the driest corn we have ever had. We do not want the grade lowered. It would be suicidal. Much corn in Central Illinois has not been wet in field, crib or elsewhere. Our corn is very dry. All of the corn of this crop which I have shipped to New York has graded No. 2. We want the rule left as it is, but the practice in grading changed. Corn which I ship to St. Louis is graded as it ought to be."

B. H. McFadden of McFadden & Co., Havana, Ill.: "It is the desire of the country dealer to have a place to hedge, and we aim to put up corn and sell for May delivery. We are afraid to sell May corn for fear our corn will not grade. The standard is too high. A new grade would not benefit the country shipper unless accepted on contracts. At present not over 200,000 bushels of contract corn are in store in the elevators of the 'greatest and best market in the world.' Corn which is now graded No. 3 is good enough for all manufacturing purposes, and we have sold much of late on track at a price within one cent of the price for May corn in Chicago. The corn which we are asking a just grading for, belongs to country shippers. These Board of Trade men buy it of us after it is graded."

Wm. Dunn of Chicago: "I have watched the grading and think no fault is to be found with the inspection department. In seaboard markets corn containing considerable moisture is graded No. 2 and shipped abroad before it has a chance to heat. St. Louis grades are much lower than Chicago grades, and that market is 3 to 5 cents lower. Mr. Smillie always gets down in the grading in April."

N. H. Warren of N. H. Warren & Co., Chicago: "We handle six to ten million bushels of Nebraska corn. It is of good quality and dry. We should have no doubt as to the grade of No. 2 corn. It should be reliable and grade first class in other markets. The interests of the whole trade do not permit of any chances being taken on this grade. Like Mr. Baker, we have lost many thousands of dollars on hot corn, and I want no more of it. If we have any doubt as to the inspector's grading being correct we appeal to the committee on appeals. The higher grade gives us much better prices and buyers know that they will get merchantable corn. Skin grade corn is frequently admitted to the higher grade."

Mr. E. B. Baldwin, Chicago: "New York and other seaboard markets can grade corn No. 2 because it all goes into immediate consumption, not into store."

W. J. Pope of Pope & Lewis, Chicago: "We have had many cars graded No. 3 that should have been graded No. 2. Upon appeal we have succeeded in having some changed, but such is a cumbersome way of securing justice. If corn is commercially dry it is not chemically dry, but it is sufficiently dry for all practical purposes. The buyer buys corn for what it is to day, not for what it will be six or twelve months hence. Corn should be graded on its present merits. Within a year we had fifty cars of one shipment changed by the committee on appeals from No. 3 to No. 2. There are periods of great and unjust rigidity when inspectors seem afraid to make anything No. 2."

Hercules F. Dousman, Chicago: "I am a buyer and I have heard that stereotyped speech of Mr. Pope's a num-

ber of times during the years that I have been on the Board. I do not know what commercially dry is, but I know dry from damp. Do not change the grading, No. 2 corn should mean the same now and always. The No. 3 grade of corn is of too wide a range. Establish a grade of new No. 2 corn, and then if the Board of Trade will make that grade applicable on contracts until April or May, this trouble will come to an end."

E. Hess, proprietor of private elevator, Chicago: "Our corn arriving from the West contains 3 to 5 per cent. more water than last year."

P. Bird Price, chief grain inspector, Chicago, in the course of his remarks, said: "We grade line grade grain impartially, and we try to eliminate the matter of time from inspection. We try our best to grade the same throughout the year and aim to admit to grade only that grain which has the necessary qualifications. Three years ago our No. 3 corn placed in sacks on shelves shrank 5.6 per cent.; this year under same conditions it shrank 6.16 per cent. One per cent of moisture means thirty-five gallons of water in a 500-bushel car. The range of the amount of moisture was from 4 to 8 per cent. A large part of the Illinois corn received this year would grade No. 1 if it were dry. It is of good quality but contains too much moisture to grade No. 2. If corn containing 7 per cent. of moisture was stored it would soon heat. Corn containing 4 per cent. of moisture that would evaporate in the manner mentioned is 'on the line.' I am in favor of a new grade to be called new No. 2. Since 1884 corn has been graded No. 3 for two reasons—quality and condition. We should have a grade that will include corn having the qualities necessary for No. 2, but be off a little in condition. Corn shipped to other cities goes into immediate consumption, while Chicago receipts are often held in store for six months or more, consequently a more rigid inspection is necessary for this market."

After hearing the arguments on both sides the commission took the matter under advisement.

HARD WINTER WHEAT AND BARLEY.

At the close of the hearing on the inspection of corn Mr. W. J. Pope presented the following petition which was signed by a large number of prominent Board of Trade firms:

CHICAGO, March 2, 1891.

The undersigned respectfully ask you to amend that part of Rule 1 relating to grades of grain established by the Railroad and Warehouse Commission and now in force, which relates to the inspection of Turkish red winter wheat, so that it shall read as follows:

HARD RED WINTER WHEAT.—The grades of Nos. 1, 2 and 3 hard red winter wheat shall correspond with the grades of Nos. 1, 2 and 3 red winter wheat, except that they shall be of the Turkish variety.

The change asked for is to substitute in place of the word "Turkish" the word "Hard," and our object in asking for the change is to define the style and quality of the grain as is done in every other class and grade inspected here. The word "Turkish" is a misnomer and is provincial.

In other markets the wheat here called "Turkish" is known and dealt in as hard winter wheat and the use of the word "Turkish" in designating this class of wheat is a serious detriment to the trade in this market.

If the change is made as suggested, this market will be put on an even footing with other markets that now attract and handle the bulk of this quality of wheat.

We further ask that Rule 6, relating to inspection of barley, be amended to read:

No. 1 BARLEY.—Shall be sound, plump, bright and clean, and free from other grain.

No. 2 BARLEY.—Shall be of healthy color, not round and plump enough for No. 1, reasonably clean and reasonably free from other grain.

This change in the rule as to No. 2 barley is necessary if the department is to grant simple justice to those who grow and those who handle it. As the rule is and has been, not one carload in five hundred inspects No. 2. barley. All crops fare and fall alike to reach this imaginary standard. Let the grade be abolished or let there be established a just rule by which the contract grade can be known and met.

A number of speeches were made for and against the change in the name of Turkish red winter wheat but all speakers on the barley question not only favored, but requested—almost demanded the change.

Mr. Pope, who favored the change, said: "The term 'Turkish' is a misnomer; we want it called hard red winter wheat. All varieties of hard winter wheat are now graded Turkish, which is wrong."

Mr. Wright, who made a long speech in favor of the change in the name of hard winter wheat, said: "The hard red winter wheat is fast supplanting the soft winter wheat and Kansas has planted 65 to 70 per cent of its winter wheat acreage with this variety. It changes in a few years, becoming softer and the seed must be renewed. The growing of that wheat has so greatly increased that it will soon supplant all soft wheats. Millers and exporters are anxious to get it. This enormous planting will give us much more of this wheat to handle. Simplify the grade and make it designate exactly what it

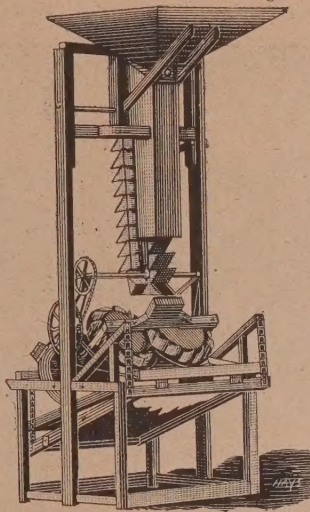
embraces. It will result to the advantage of the producer. The grade will have the same qualities as at present. You should put all varieties of hard winter wheat under one grade."

Mr. Clark thought that no benefit would be derived as the trade knows what Turkish red winter wheat is but not what hard red winter wheat is.

President Baker strongly opposed the change. He said: "I am sorry but Mr. Pope is here to pull out chestnuts. If you change the name we must go to work and build up a market for it and give buyers time to find out what it really is. If you change the name you will depreciate the market value of the wheat for several years to come. There is a 'nigger in the woodpile.' The real object in this appeal is to have this wheat admitted to the speculative grade. A change of name is always detrimental."

Mr. Templeton said: "Contract grades have double values—consumptive and speculative. Much contract wheat is a mixture of Turkish and others. On its merits Turkish wheat will and does command a better price than soft wheat."

Mr. Wright said: "Missouri and Kansas call it hard winter wheat and we should call it the same as in the markets where it is produced. We should adopt their name. Kansas City merchants sell it abroad as hard



LEASER'S SELF-OPERATING GRAIN CLEANER.

winter wheat. Chicago dealers who handle little of this wheat can take a hint from those who handle millions of bushels."

A number of spirited speeches were made by members of the Chicago barley trade in favor of the change asked in the grades of barley, but none were made in opposition to the change. Each speaker seemed to be thoroughly convinced that the present grading of barley was an outrageous imposition and should be immediately discontinued.

WHEAT ENOUGH FOR ALL.

If 4 per cent. of the land area of the sixteen leading wheat states was cultivated to wheat, the acreages would equal the entire wheat acreage of this country. So it does not seem that people figuring on the increase of population exceeding the increase of wheat area, have any real cause to fear that there will be any want of bread, when prices are high enough to encourage the extension of wheat fields, by bread raisers. If 30 per cent. of the dry lands in the sixteen states referred to were given to wheat cultivation a crop of twelve bushels an acre would exceed the entire wheat production of the world. This generation may at least settle down to the conviction that there is wheat land enough, if cultivated, to feed all when properly distributed.—*Minneapolis Market Record.*

The sixty-one Chicago firms engaged in the broom corn and broom manufacturing business employ 195 men and thirty women.

The imports of breadstuffs into the United States during January, 1891, amounted to 132,302 bushels barley, 247 bushels corn, 329 bushels oats, 105,423 bushels wheat; against 1,079,057 bushels barley, 295 bushels corn, 824 bushels oats, 8,036 bushels rye and 182 bushels wheat in January, 1890.

LEASER'S SELF-OPERATING GRAIN CLEANER.

We give herewith an illustration of Leaser's Patent Self-operating Grain Cleaner, invented and manufactured by Joseph Leaser of Dumont, Minn.

Mr. Leaser's claims for this patent are as follows: The operating of the grain cleaner by the weight of the grain, which is accomplished by means of an endless belt, to which a number of elevator cups are attached. The descending part of this endless belt is encased in a spout which fits so closely about the cups that no grain will pass by. The front of this spout is perfectly plumb, while the back and sides are placed at an angle to make the top a trifle larger than the bottom. The hopper is provided with two slides, one in front and one in the back, to direct the grain into the cups. The grain runs out of the hopper into the cups. Soon grain accumulates in the cups with sufficient weight to start the machine.

The grain is emptied from the cups into another spout which directs it into the cups of the two spreading wheels. They in turn spread the grain over the sieves as they turn around. Power is transmitted from the endless belt by means of a sprocket wheel and chain to the fan. The sieves are shaken forward by an eccentric on each end of the fan shaft.

Mr. Leaser says his patent is also for beaters under the sieves. These are not shown in cut, but at certain intervals the sieves are struck by cleats placed on an endless belt which runs from driving shaft. All chaff is blown back on upper end of sieve. Mr. Leaser claims that his machine is self operating; that all clogging is prevented by the spreading wheels and the beating of the sieves, and that with a height of 18 feet from floor to the top of hopper sufficient power will be obtained to clean the grain as well as any ordinary fanning mill.

The patentee says, "The height determines the power, not the volume of grain, as the sieves must not be given more grain than they can take care of. The power and the spreading wheels can be attached to any other cleaner. By determining the power required to operate the cleaner and the power required to elevate the amount of grain which the cleaner can handle, the necessary height for hopper can easily be obtained."

"These spreading wheels enable me to make any size machine and prevent clogging. In the cleaning machines which I make for the farmers I use these spreading wheels for operating the machine."

IMPORTS OF BREADSTUFFS.

The breadstuffs imported by the United States during the month of March included 161,212 bushels of barley, 52 bushels of corn, 1,775 bushels of oats, 4,687 bushels of rye, and 59,479 bushels of wheat, against 992,725 bushels of barley, 114 bushels of corn, 667 bushels of oats, 16,106 bushels of rye, and 967 bushels of wheat during the same month last year. During the eight months closing with February 4,433,291 bushels of barley, valued at \$2,844,525; 1,635 bushels of corn, valued at \$1,241; 4,091 bushels of oats, valued at \$1,590; 73,778 bushels of rye, valued at \$47,947, and 394,971 bushels of wheat, valued at \$301,567, were imported, against 8,218,648 bushels of barley, valued at \$4,180,393; 1,236 bushels of corn, valued at \$634; 11,899 bushels of oats, valued at \$4,320; 89,013 bushels of rye, valued at \$50,506, and 111,618 bushels of wheat, valued at \$80,312 during the corresponding period of 1889-90.

Of the imports given above there was exported during February, 1 bushel of barley and 71,465 bushels of wheat, total value \$57,432, against 8,036 bushels of rye, value \$4,222 in February last year. For the eight months closing with February the imported breadstuffs exported were 1 bushel of barley, valued at \$2; 105,111 bushels of rye, valued at \$67,034, and 331,610 bushels of wheat, valued at \$298,039, total value \$392,156, against 128 bushels of oats, valued at \$49; 49,714 bushels of rye, valued at \$29,225, and 125,753 bushels of wheat, valued at \$80,788, total value \$114,505, for the corresponding eight months of 1889-90.

The shipments of flaxseed from Chicago were in January 194,190 bushels, in February 172,700 bushels, in March 265,650 bushels, against January 157,698, February 84,462, and March 131,890 bushels last year. The shipments and receipts as reported for March, 1891, include all that was received, while the amounts given for January and February include only what was inspected,

ECONOMY OF POWER IN ELEVATORS.

Taking the elevator as an important theme, the question should be asked and acted upon; says the *Modern Miller*. Are all elevators worked advantageously from a standpoint of power and frictional economy, and calculated to assist all operations in proper uniform work? The elevator not having a free and complete discharge will waste power in re-elevating material that has escaped past the discharge opening down the leg. The elevator running faster than necessary to do the work, because the under speed is required to overcome the difficulties presented by the improper discharge spout, will waste all the power consumed by the necessary speed, and this waste of power is directly attributable to the improper discharge spout. Buckets improperly formed may cause a similar waste of power, or buckets improperly spaced on the belt may produce a like result.

It is known that an elevator man, without due study and thought, concluded that an unduly high discharge spout was responsible, on account of blowing, for improper flow of material to an elevator. Finding that this discharge spout could not be lowered except at the risk of allowing the spout leading from it too little pitch to conduct the material away, the spout was lowered amply and a conveyor provided to carry the material to the desired point. But after this change was made the discovery was made that the trouble was not overcome nor even modified, and a more thorough investigation revealed the fact that the trouble was not caused from the head by blowing, but from an impropriety at the boot, the buckets not "dipping" sufficiently to sweep cant-board clean, accumulation of material began at the bottom of elevator boot, and as material will not flow over itself to advantage, it "backed" up the cant board and then up the spout until its weight forced a rush, or until the spout was choked.

In this instance the boot needed attention and not the head, and instead of the discharge spout being lowered the supply spout should have been raised, and if the pitch of the supply spout would not permit raising sufficiently to obviate the difficulty, the conveyor should have been provided at the bottom instead of at the top.

The ways by which power may be unnecessarily consumed by elevators are numerous and various. For instance, we have seen material conducted from the top story to an elevator boot located in the lower story, when the material might have entered at some point above and thus save several stories' elevation. We have seen it enter the descending leg, producing a draft and necessitating re-elevation, when it should and might have entered the ascending leg, obviating both. Again, when obstructions prevented the entrance of streams, except near the bottom, we have seen the material enter the descending leg in such a manner that the up-going buckets were called upon to resist the momentum of the falling material, when a "cracket shoe" should have been provided to break the force of the falling material without consuming power.

LIEN ON CROPS.

Senator Shumway has introduced a bill in the Illinois Legislature providing for an act to amend section thirty-one (31), chapter eighty (80) of "An act to revise the laws in relation to landlords and tenants," approved May 1, 1873, in force July 1, 1873.

Section 1 of this bill provides that, Be it enacted by the people of the state of Illinois represented in the General Assembly, that section thirty-one (31), chapter eighty (80), of "An act to revise the law in relation to landlords and tenants," approved May 1, 1873, in force July 1, 1873, be amended to read as follows:

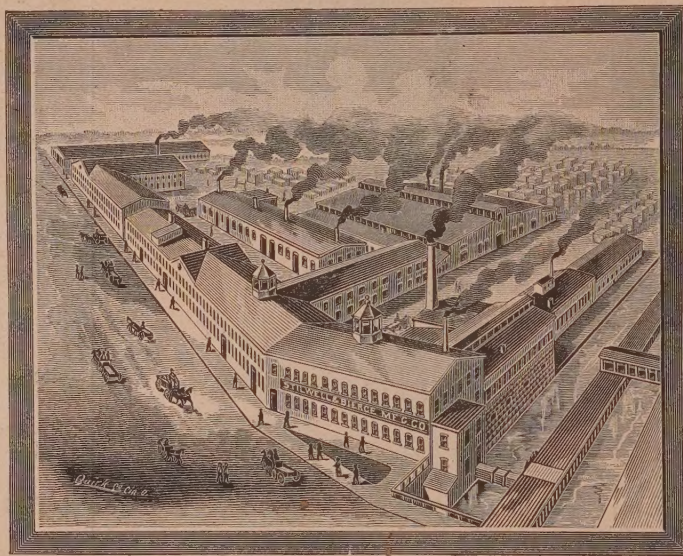
Section 31. Every landlord shall have a lien upon the crops grown or growing upon the demised premises for rent thereof, whether the same is payable wholly or in part in money or specific articles of property or products of the premises or labor, and also for the faithful performance of the terms of the lease. Such lien shall continue for a period of sixty days after the expiration of the term for which the premises were demised.

Provided, first, that no regular grain buyer, hay buyer

or stock feeder shall incur any liability to such landlord by reason of any purchase of such crop unless he shall have received notice of such lien from said landlord or his agent previous to the delivery and payment for said grain to said tenant. Provided, further, that this provision shall not apply to crops growing, or grain in cribs or granaries, or hay in stack upon the premises where such crops were grown.

A LARGE MACHINERY ESTABLISHMENT.

The Stilwell & Bierce Manufacturing Company, whose works are here illustrated, are proprietors of one of the largest machinery establishments in the West. This enterprise dates back to 1866, and was commenced in a small way by G. N. Bierce and E. R. Stilwell, and this moderate start formed the nucleus from which was developed the enormous business now operated by the Stilwell & Bierce Manufacturing Company, which was incorporated in 1870. Their shops occupy a frontage of nearly 1,000 feet with large rear additions. The mechanical department embraces the heaviest and most modern machinery appliances and tools, most of which is of late introduction, the facilities of the works having recently been nearly doubled in capacity. It is operated by water power with steam power in reserve, and a force of about 350 skilled workmen are given lucrative employment.



WORKS OF THE STILWELL & BIERCE MFG. CO., DAYTON, OHIO.

The establishment is divided into three general departments, each manned by an accomplished engineer with a suitable force of assistants. These departments cover the manufacture of the celebrated Victor Turbine Water Wheels, both vertical and horizontal, in great variety of styles and sizes and power connections of all kinds, their catalogue of gears, pulleys, etc., being very complete and extensive; modern flour mill machinery, including Odell's Roller Mill, Reels, Purifiers, etc., the good qualities of which are attested by the number of large first-class flour mills built by them, and devices for heating and purifying the feed-water for steam boilers, prominent among which are "Stilwell's Exhaust Heater and Filter Combined," of which over 5,000 are in daily use, and "Stilwell's Live Steam Purifier," a more recent invention which is very successful in removing from feed water sulphates of lime, magnesia and other impurities which are beyond the reach of any heater using exhaust steam.

Handsome catalogues, fully illustrating and describing their various specialties, will be cheerfully furnished to all interested parties who will state their requirement and apply to Stilwell & Bierce Manufacturing Company, Dayton, Ohio.

Four years ago Miss Lena Woodard, living on Thorn Creek, Washington, sowed the seed from one head of barley. She harvested the crop with a pair of shears and sowed the amount received the next year, again harvesting it with her shears. The third crop her father cut with a grass scythe, getting enough barley from this crop to sow forty acres last spring, which averaged forty bushels to the acre when threshed, making a total yield of 1,600 bushels from one head of barley in four years.—*San Francisco Chronicle*.

CHICAGO AND NORTHWEST GRANARIES COMPANY.

The unfavorable conditions that the City of Chicago Elevators, Limited, has had to face, which have so far resulted most unfortunately for the stock, were not shared by the other elevator company that went into the hands of English investors at about the same time. The Chicago and Northwest Granaries Company, Limited, in spite of the short crops, has been making earnings that were about equal to the promises of the prospectus. The company was organized October, 1889. The first year was not so satisfactory as the promoters might have wished, but since then the results have shown decided improvement. At the last annual meeting the fiscal year was changed so as to end Oct. 1. The net earnings of the property from Oct. 1, 1890, to Feb. 1, 1891, were \$62,062. Some of the people connected with the management of the property say that the showing for the year is likely to be proportionately as good as the showing for the first four months. If that is the case the net earnings for the year will be \$186,000. The property was floated on the strength of the earnings of 1888, which were reported as \$305,000. If the earnings for the year keep up to the proportion shown for the first four months they will only slightly fall short of meeting all fixed requirements and paying the promised 15 per cent. on common stock. The fixed requirements consist of 6 per cent. on the £120,000 of debentures, 8 per cent. on the £120,000 of preferred stock, and £5,000 in the sinking fund to redeem the debentures. These charges, together with the 15 per cent. dividend on the £120,000 of ordinary stock, require \$189,000.

The property of this company consists of what is known as the Van Dusen Elevators. The first of these were established in 1871, and at the time the property was taken over by the English company they numbered seventy-five, most of them distributed along the line of the Chicago & Northwestern Railroad in Dakota and Minnesota. Together with these was the Star Elevator of Minneapolis, an elevator having a capacity of 1,800,000 bushels. When the company was organized it was provided with £100,000 of working capital. Outside of that the company has been a heavy borrower, carrying a line of loans this winter, which, it is said, amounted to \$1,500,000 to \$2,000,000. With this large working capital they have been able to purchase grain for cash, store it in their warehouses, and sell for future delivery, thereby insuring their earnings for carrying charges. It is this plan which has enabled them to make so good a showing as they have. It is understood that the City of Chicago Elevator Company has made arrangements to secure business in the same manner. They have all along been doing that to some extent, but they will hereafter carry the plan much further.

OUTLOOK IN WASHINGTON.

Official reports from seventeen towns in the grain districts of Eastern Washington, indicate a largely increased acreage over that of last year. These reports include the Palouse, Walla Walla, Yakima and Pothatch Valleys, where the famous wheat blockade occurred last autumn, and also from that broad region encircled by the Big Bend and Columbia Rivers. In the Big Bend, where government land is being rapidly taken by immigrants, the increase of acreage will run from 50 to 100 per cent. In the Palouse, Walla Walla, Yakima and Pothatch districts the increase will be about 25 per cent. As barley was a profitable crop last year the acreage of that grain will be particularly large. The soil is in excellent condition. In places it is wet to a depth of three feet. Farm work is being pushed with exceptional vigor.

Experiments, with favorable results, have been made in California to determine the value of the ramie plant as a crop. A new machine has been invented to decorticate the plant, which removes the difficulty of competing with the cheap hand labor of India. The fiber, when reduced to an available form, can be used to make grain bags and flour sacks. It is very strong and has great beauty of luster and texture.

GRAIN INSPECTION AT KANSAS CITY.

The Kansas grain inspection law is now in full blast, and the effect upon the Missouri department is marked, says the Kansas City *Star*. Nearly all of the grain firms here have gone over to Kansas for inspection, and are now operating under the Kansas law. The Missouri office is getting the small end, and so great has been the decrease that it is almost certain that the force here will be further reduced.

Telephone inspection and political direction have made the Missouri department decidedly unpopular with a majority of the grain men, and as far as possible the inspections are all ordered in Kansas. For the first seven days of this month the Missouri inspectors here inspected on 231 cars, while in Kansas the inspections have averaged 75 to 100 cars a day. When the receipts were good the average number in Kansas City was 150 to 200 cars daily. In order to cover expenses the average for the month of twenty-six working days must be fifty cars a day. It will be seen that the department on this side is running behind, and it will be necessary to let out more men. As it is now, one man could do all the work for which four are employed. Two out of the four men are related to the powers that be, and it requires at least one of the other two to conduct the office properly and straighten out the tangles.

The Kansas office is doing the work at present with two inspectors. The intention was to have three inspectors, but a hitch occurred on the third appointment. The two inspectors appointed are from Missouri, and the third man, Grant, also came from this state. But when his nomination was made a row was started by State Senator Buchan, father of the bill, who considered that he had certain rights in the premises, also a man from Kansas to appoint, and he foreclosed his mortgage on the vacancy, declaring that at least one inspector must be a Kansan. It would appear from this that the Kansas department will have a fault in common with the Missouri, viz., political inclinations.

In Missouri, meanwhile, the fight is still on. O'Shea realizes that the Alliance with Breathitt in tow will run the machinery, and he is getting ready to vacate in November—in fact, has stated that he did not expect to remain long in office. This will be another plum for Breathitt, but it is evident that his turn is also coming, and that the deposed office holders and their friends are getting ready to oppose the commissioner's renomination the coming year.

While all this "figgerin'" is going on the Missouri inspection is losing caste, and if a change does not occur soon the chances are that the department will not be hard to manage by a new board on account of its size.

APRIL CROP REPORT.

The monthly crop report issued by the Government Agricultural Department for April states that the April returns to the Department of Agriculture make conditions of winter wheat 96.9, and of rice 95.4. The season for seeding was favorable over the whole winter wheat area, the soil was generally easily worked, the seed was prepared with unusual care and sowing, followed by gentle rains, sufficient to pack the earth and insure prompt and perfect germination.

On portions of the Atlantic and Gulf coasts the time of seeding was somewhat prolonged by occasional rains, but the delay was not serious and the desired area was planted, and in good growth by the advent of winter.

Suitable weather and soil conditions enabled farmers of the Ohio Valley states to put in a full area under entirely favorable circumstances, and the plant went into winter quarters with sturdy growth and good color.

In portions of Kansas and Nebraska the prolonged drouth of last summer extended into the period of seeding, interfering somewhat and rendering germination slow, but seasonable weather during the late fall and early winter was sufficient to offset the disadvantage of a late start.

The entire season was favorable in California, while in Oregon a dry seed bed received moisture in time to secure good, though late growth.

The Hessian fly, which was feared in December in the Central West, is yet in abeyance, but the presence of the pest is noted in many localities, and serious injury might follow should the early season prove favorable to its development. The general average for condition is the

highest reported for April since 1882, and the individual state averages are remarkable for their uniformity. It is 16 points higher than last year, and 3 above the returns for 1889.

A high April condition does not insure a large yield, but it indicates a strength and vitality which would enable the plant to withstand more than the ordinary vicissitudes of the season. The nearest approach to present conditions during recent years was in 1884, when the largest crop ever grown was harvested, but similar high conditions in 1886 were followed by a crop of little more than the average proportions. The averages of condition in the principal states are: New York 92; Pennsylvania 98; Michigan 93; Indiana 99; Illinois 97; Missouri 96; Kansas 99; California 99; Oregon 97; Ohio 98; Kentucky 97; Tennessee 98.

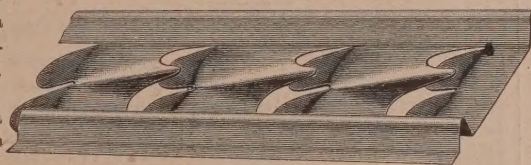
The April averages in 1890 were: New York 88; Pennsylvania 99; Ohio 87; Michigan 67; Indiana 75; Illinois 75; Missouri 83; Kansas 87; California 71. General average 81.

THE CLOSZ PATENT SCREENS.

We give herewith an illustration of the Closz Patent Screen, designed for cleaning purposes, and for which are claimed, first, wonderful capacity; second, great screening power; and third, practical freedom from choking or clogging.

The general construction of these screens is apparent from the illustration, although styles differ according to the various uses to which these screens may be put. The style illustrated herewith is designed especially for oats. The manufacturers also have a special corn screen, a general screen for oats, corn, etc., and one for wheat on receiving separator; also several styles for threshing machines. They are made both of sheet steel and also of zinc.

These screens are intended for the coarse screening of



THE CLOSZ PATENT SCREEN.

all kinds of grain. First, in threshing machines, where they promise to become indispensable because of their superior screening power, capacity, and the fact that under ordinary circumstances they do not choke or clog. Ordinarily it requires too strong a current of air through threshing sieves in order to clear the grain and remove the chaff and straws from the sieve. The Closz Screen requires less air, and with a strong air current grain does not "shoot over" the sieve as easily as in ordinary constructions. The screen clears itself.

These advantages follow more or less in other cleaning machines and separators. On oat separators they are giving splendid results.

The corn screen will not choke with crushed corn when the cob is broken into all shapes and sizes.

For wheat on receiving separators it screens weeds very closely, also many oats and metallic bits, as small tacks, clout nails, small brads, etc., and because of not choking they save much bother in this capacity.

These are only a few of the functions for which these screens are fitted. Full particulars may be obtained by writing to Chas. Closz & Co., St. Ansgar, Ia., who will be pleased to answer all correspondence.

GRAIN AT CHICAGO.

The receipts and shipments of grain at Chicago during March were as follows:

	RECEIPTS.		SHIPMENTS.	
	1891.	1890.	1891.	1890.
Flour.....	320,246	339,820	242,814	254,853
Wheat.....	951,078	518,887	974,135	378,092
Corn.....	4,321,596	9,816,478	3,047,871	5,245,944
Oats.....	4,541,443	3,083,571	3,755,900	4,804,749
Rye.....	244,969	153,288	216,613	149,708
Barley.....	879,942	1,036,307	411,414	782,654

The exports of hay from the United States during January, 1891, were 1,926 tons, against 2,721 tons in January last year. The exports of hay during the seven months ending Jan. 31 were 18,652 tons valued at \$309,892, against 18,481 tons valued at \$313,310, for the same months of 1889-90.

Trade Notes.

Judicious advertising
Creates many a new business;
Enlarges many an old business;
Revives many a dull business;
Rescues many a lost business;
Saves many a failing business;
Preserves many a large business;
Secures success in any business.

Milton F. Williams & Co. of St. Louis have purchased the factory building at 2705 North Broadway and removed thereto. This change of quarters gives them considerably more room, as they have 40x140 feet, with a second floor for office, pattern shop, pattern loft, etc. The purchase included steam plant, shafting, blacksmith vises, and quite a lot of odds and ends useful in connection with almost any kind of manufacturing business.

The Garry Iron and Steel Roofing Company, whose works are located at 152-168 Merwin street, Cleveland, O., report an exceedingly fine trade for this season of the year. They have a large number of orders ahead, some of which are for May and June deliveries. They are exporting their goods very largely to Mexico, South America and other foreign countries, and recently received an order from St. Petersburg, Russia, for their celebrated Continental Metallic Shingle, also from South America for a large quantity of their corrugated galvanized iron.

Queries and Replies.

Questions and answers are inserted under this head free of charge, and all are invited to avail themselves of this column.

No. 51. Elevators and Dumps.—In reply to Query No. 48 in the AMERICAN ELEVATOR AND GRAIN TRADE regarding elevators and dumps, will say there are elevators operating with chain and ordinary buckets on small grain, and I see no reason why they would not work well with ear corn; but, unless the grain is wet, I consider rubber belting far superior. There are dumps in use where the whole platform dumps, but I know of no special manufacturer.—G. M.

No. 52. Wagon Dumps.—In reply to "Martin's" Query No. 48 in the March number of the AMERICAN ELEVATOR AND GRAIN TRADE, I can say that while I have not seen any dumps that dump the whole platform, I have no doubt that such a dump could be built in the elevator on the same plan as the common kind. I have seen dumps made by the E. H. Pease Manufacturing Company of Racine, Wis., J. M. Harper of Peoria, Ill., and W. G. Adams of Sandwich, and if Martin will write to one of these firms he may learn something in respect to dumps such as he describes.—S. A. M.

NEW GRAIN ELEVATOR INVENTED.

John Beynon has invented and patented a grain elevator that competent judges pronounce the very best ever invented. It is now on exhibition in the Watertown Machine Company's building, and a few days since we spent a few interesting moments in having the workings of it explained to us. It does its work thoroughly, and in a far better manner than anything ever before seen by any one here interested in such a machine. It differs materially from any other kind of an elevator in that it elevates the grain by suction, throwing all the dust out of the grain through a fan without waste of material. A good feature of this machine is that the power to run it need not be in the elevator building, thus saving a great deal to owners of elevators in the one item of insurance alone. Every elevator man in the country should see this machine.—*Gazette, Watertown, Wis.*

The exports of rice from the United States in January were 39,162 pounds, compared with 73,795 pounds in January last year. The exports for the seven months up to Feb. 1 were 311,182 pounds valued at \$19,495, compared with 269,712 pounds valued at \$14,964, for the same months of 1889-90.

WINNOW CAREFULLY.

"As ye sow so shall ye reap;"
 This the farmer knows full well;
 'Tis a thing in mind to keep,
 'Tis the seeding that will tell.
 Now the farmer takes a hand
 In the game of politics,
 Let him ponder on the land -
 And the proper crop, nor mix
 With his seed the seed of tares.
 Let him sow what crop he will
 So 'tis good and that he cares
 To utilize the fanning-mill!



[We invite correspondence from every one in any way interested in the grain trade, on all topics connected therewith. We wish to see a general exchange of opinion on all subjects which pertain to the interest of the trade at large, or any branch of it.]

SUCCEEDED.

Editor American Elevator and Grain Trade:—We have succeeded C. S. Burr, doing business at Tama, Gladstone and Potter, Ia. Inclosed please find \$1 for which send us the AMERICAN ELEVATOR AND GRAIN TRADE for one year.

Yours truly, H. D. LANE & Co.
 Tama, Ia.

RETIRED FROM BUSINESS.

Editor American Elevator and Grain Trade:—I have sold out my grain warehouse and steam elevators to my brother, B. Frank Walter, who has been engaged with me in the capacity of cashier and bookkeeper and is fully conversant with all the details of the business. He has just put in one of the new Warehouse Separators made by the A. P. Dickey Manufacturing Company of Racine, Wis., and it does excellent work. I have taken your AMERICAN ELEVATOR AND GRAIN TRADE since its first issue and attribute my success in business in a large part to its useful precepts. As I am out of business you will please send it to my successor, B. F. Walter.

Yours truly, BRINTON WALTER
 Christiana, Pa.

IT CAME OFF.

Editor American Elevator and Grain Trade:—Not long since I had occasion to go through a grain elevator, and while inspecting the machinery the engineer called my attention to the main driving belt running from the engine pulley to the shaft thirty feet off, and asked me why the belt would not stay on. He said that it kept coming off and wore out very rapidly. As to its wearing out that was easily accounted for, as he had a board nailed to the ceiling to keep the belt on the pulley. Everyone knows that such practices will ruin any belt, and I told him so. He admitted it, but said that if he could only get the belt to run on the pulley it would be all right; he had intended to fix it before, but did not know just what to do. I wonder how many others are running their belts in that careless way. I advised him to get the shaft in line as soon as possible before he would need to get a new belt at a cost of about \$40. Money that is laid out to buy new belts to replace others worn out by carelessness is just thrown away, and is a clear loss.

Yours truly, N. G. NEER.

COMING TO THE FRONT.

Editor American Elevator and Grain Trade:—It is with pleasure we note the remarks under the head "Complaint of Kansas City Grain Dealers." If the people of the West will continue to look for Southern ports through which to ship their grain to Europe and South American ports we feel confident it will result in our mutual good.

Give us the same facilities for handling grain as the Northern ports possess and the tide of trade will soon turn. Our ports are never blocked by ice. The competition of the Charleston, Cincinnati & Chicago Railroad will bring us some 250 miles nearer to Chicago than New York is. We have a harbor unsurpassed by that of any other city on the Atlantic coast, within seven miles of the ocean and we can from our docks see the commerce of the world passing.

The South has had a hard pull, but she is rapidly coming to the front and all we ask is that the good people of

the West come and see us to be convinced of our natural advantages.

Yours truly, J. N. ROBSON & SON.
 Charleston, S. C.

BUILDING ELEVATOR.

Editor American Elevator and Grain Trade:—The Sehr Mill Company is putting up a 30,000-bushel wheat elevator, the first floor to be used as a storage room for flour. The elevator will be 42 feet square and 52 feet high, with eight bins 13 feet square. I will superintend the building of the elevator for the company.

Yours respectfully, L. M. PIPER.
 Boonville, Mo.

IN THE INTERESTS OF BOTH.

Editor American Elevator and Grain Trade:—Replying to your queries regarding the change in barley grades would say that by furnishing uniform standard grades sellers and buyers can trade in and make it possible to have barley intelligently handled by and stored in the public elevators when market is not satisfactory, or when the receipts are larger than wanted for immediate use. This is in the interests of both buyers and sellers, provided we can have a reasonable and intelligent inspection based upon the quality of barley for malting purposes; but if inspectors pass into the desirable grades, barley that has been scoured to bring up the weight, or treated by chemicals to improve the color, buyers will soon shun the mixture, as it requires no large amount of that class of grain to spoil the whole.

The rules and inspectors both should carefully guard against the mixture of barley of crops grown in different years, as the mixture is worthless for malting purposes.

Yours truly, YOUNG & NICHOLS.
 Chicago.

ADVANTAGEOUS TO THE BARLEY TRADE.

Editor American Elevator and Grain Trade:—In answer to your questions would say first, that the proposed change of grading will prove greatly to the advantage of the country shipper and the barley trade at large, by widening the market. Buyers will be able to place their orders here for a standard grade of barley for future delivery, and instead of the barley trade being confined to the sample market, as it is at present, a large speculative demand will doubtless arise for No. 2 barley in store. Experience has shown that dealers, as a rule, are unwilling to buy any grain for future delivery (except by sample), of a lower grade than No. 2, and as no barley worth speaking of has in the last year or two inspected No. 2, the benefit of this market for future delivery has been denied to handlers of barley. This buying and selling of grain for future delivery, or as it is often falsely termed by those ignorant of the subject, dealing in options, is the life of the trade in grain, furnishing as it does, a market, at almost any hour of the day for a standard grade of grain for future delivery, thus enabling the purchaser of grain in the country to protect his purchases with sales for future delivery. For the last few years this benefit has been denied to barley dealers, and the double value accruing to grain, that has at the same time a speculative as well as a sample value, has been enjoyed by other markets with more judicious and reasonable grading than has prevailed in Chicago.

The new grading will increase Chicago's barley receipts for the reason that all other things being equal it will probably enhance the value of all barley that will grade No. 2 several cents a bushel, and will enable sales to be made to arrive with much greater facility, and less risk than at present.

At present buyers of barley are inclined at times to take technical advantage of what seems to the shipper to be an almost ridiculous difference in quality, and to force the seller, especially on a declining market, to make a severe discount for a very small difference in quality. With speculative competition before them this difference is liable to be greatly lessened.

The reasons we have for thinking that the inspectors will grade barley more satisfactorily if the changes are made, is that they will now have a real instead of an imaginary standard to work to. It is hoped, though not yet settled, that the chief inspector will select a standard of barley at the commencement of the season to govern it as to color and quality, then the inspectors will not have to be all the time in terror that somebody will bring suit against them on their bonds for an improper grading of grain. We believe this fear is practically the only cause

which has resulted in giving us a No. 1 grade of barley on a No. 2 standard.

It is impossible for any one to state what per cent. of the receipts ought to grade No. 2 until the quality of the new crop is ascertained, but our opinion has always been that at least 50 per cent. of an ordinary good crop of barley should grade No. 2 and better.

Respectfully, A. C. BUELL & Co.
 Chicago, Ill.

NEW YORK TRANSFER CHARGES.

Editor American Elevator and Grain Trade:—The article headed "Robbers Exposed" in the February issue of the AMERICAN ELEVATOR AND GRAIN TRADE has caused some railroad grain elevator magnate in New York to open fire on me from behind the bush.

This Erie Canal assassin writes to your journal in the March number in "Queries and Replies" column, that the resolution published under the head "Robbers Exposed" is a lying complication, but the coward does not let the public know his name. Now, this matter of transportation is of vital importance to the producers of the great Northwest and the consumers of the densely populated seaboard cities. I do not think it is fair to publish any correspondence on the subject except the writer's name appears under or over what he says.

As to the elevator charges at Newport News, I have not the slightest doubt that they are one and one-fourth cents a bushel for transferring grain from cars to ships; but this does not alter the fact that the cost does not exceed one-eighth of one cent a bushel, which permits crediting one and one-eighth cent to transportation receipts, thereby giving the railroad companies carrying grain to Newport News or any other seaport where a similar service is required, a decided advantage over the Erie Canal where the aggregate charges for transferring grain are \$28.75 per 1,000 bushels, equal to two and seven-eighths cents a bushel. These latter figures no one, not even the enemies of the Erie Canal, attempt to dispute, but the railroad grain elevator combines, which are determined to suppress individual enterprise on the lakes and annihilate the Erie boatmen, deny that grain can be elevated for one-eighth of one cent per bushel.

Now, to bring these commercial pirates up with a round turn, I will append the evidence of two gentlemen given before legislative committees which were investigating the elevator extortions on canal grain at Buffalo and New York:

Adam R. Gray of New York, and William H. Abel of Buffalo, under oath.

In Senate, Doc. 89, vol. 6, of 1875: Evidence by Mr. William H. Abel, at that time president of the Western Elevating Association of Buffalo. He said: "There was no elevating association in 1869, and the charge for elevating ranged from one-eighth to one-quarter of one cent a bushel, with ten days' storage free."

In Assembly, Doc. 114, vol. 8, of 1881. Question: Mr. Gray, state to the committee approximately the variations in the rate of elevating grain from canal boats in the port of New York.

Answer: "In 1860 we had no floating elevators here, there were two or three warehouse elevators; they charged for taking grain out of boats then and trimming, ten cents a hundred bushels; they did not charge anything for hoisting it out of the boat. In 1861 we got the first floating elevators, they charged three-eighths of a cent a bushel for taking grain out of boats! the stores that same fall charged one quarter of one cent a bushel. Then the boats got from 13 to 25 cents a bushel on wheat, and the state collected 6 2-10 cents toll, besides a toll of 2 cents a mile on the boat." Now all the canals in the state of New York are free waterways, and the Erie boatmen have carried wheat from Buffalo to New York for two cents a bushel, and lighter grains in proportion; oats only one and one-eighth cents.

Mr. Gray was summoned before the committee on account of his familiarity with all the details of handling grain. Numerous old settlers now in New York say that back in the '50s grain was hoisted out of boats by horse power for ten cents per 100 bushels, \$1 per 1,000. Now with the latest improved elevators the charges are \$1.12½ per 100 bushels. Mr. John Kelderhouse of Buffalo, who is well known in the lake transportation business, says that he has transferred grain from vessels to canal boats at Buffalo, doing the shoveling by hand and the hoisting by horse power, for less than \$2.50 per 1,000 bushels, while now the charges at Buffalo for the same service are \$12.75 per 1,000, and the grain is scooped and handled by steam power. Besides all the above evidence

and statements from reliable citizens, Mr. Charles Sparks, foreman of the great Pennsylvania Terminal Elevator, has given figures showing that less than one-sixteenth of one cent per bushel pays the cost of transferring grain.

By the way, no one has attempted to deny that the Pennsylvania Railroad Company was called up before the Inter-State Commerce Commission in 1886 for transferring grain from cars to ships at Jersey City *absolutely free* of any charge to the owner of the grain. At that time the aggregate charge for transferring canal grain in New York was one and eight-tenths cents a bushel.

As this elevator controversy hinges on whether grain can be elevated at a cost of one-eighth of one cent a bushel, I believe that I have shown conclusively that it can be done.

Respectively, CAPT. M. DePUY.
President of the Canal and Harbor Protection Union of the state of New York.
New York.

NEW BARLEY GRADES.

Editor American Elevator and Grain Trade:—In answer to your several questions I submit the following:

First: "In what way will the proposed change prove of advantage to the barley trade?" It will broaden the Chicago barley market and increase the volume of trade in barley, enabling local and Eastern buyers to both buy and sell an established grade of which there will be a sufficient amount in store to make a daily market, which will enable the producer and country dealer to buy and sell, based on the daily values at Chicago, serving not only as a guide, but protection against losses. The increase in volume of trade will tend to enhance prices and stimulate the production of barley, and enable the farmer and country dealer to sell his growing crop for future delivery instead of having to wait and sell his barley by sample. It gives the producer the option of selling by grade or waiting to sell by sample on arrival, as he may elect.

Second: "How will it increase Chicago's barley receipts?" It will increase barley receipts in Chicago by furnishing a steadier and more permanent market, and enable owners to hold their barley in store until the market price is satisfactory, as the receipts of regular No. 2 barley are always saleable. Chicago market for No. 2 barley will then be the standard, the same as it is now for wheat and corn.

Third: "In what way will it affect the interest of the country barley dealers?" It will be a benefit to the country dealer as it will give him a standard to work by, both in buying and cleaning, and will prevent his being forced to sell by sample on arrival at Chicago regardless of prices, to avoid demurrage charges; also save innumerable special bin lots if sent to elevators here; also prevent sacrifice in price when special bins are not obtainable.

Fourth: "What reasons have you for thinking that the inspectors will grade barley more satisfactory if the changes are made?" The inspection department will be able to pass as No. 2 barley all bright or straw colored, plump, reasonably sound, heavy malting barley, reasonably free from other grain and belonging to the same generic or family, instead of the old rule, which demanded all No. 2 barley should be bright. The accepted meaning of the word "bright" being free from stained grain; this precluded the making of No. 2 barley out of barley that was slightly stained, even though otherwise No. 2. In short, the standard of No. 2 barley has been so high in the past that it required perfectly dry harvest weather to mature and save the crop in to have it pass No. 2, a circumstance which does not occur one year in five, and is not held to be necessary in establishing the grade of No. 2 in other markets.

Fifth: "If the rule is changed what per cent. of the receipts do you think ought to grade No. 2?" The proportion or per cent. of No. 2 each year under the change in the rules of inspection will depend upon the crop and the weather during harvest. As I understand the new rule the intent is to pass as No. 2 only good, reasonably sound, malting barley of good weight and color, and reasonably free from other grain. Under the old system good, bright, plump, clean barley, weighing 48 to 50 pounds, was classed as No. 3, or in the same grade as barley that was stained, shrunken and mixed with other grain, and only weighing 39 to 42 pounds. As a result prices of No. 3 have varied at times from 20 to 30 cents, according to quality. I have been in favor of an intermediate grade between No. 3 and No. 2 to be known as "Extra No. 3" to correspond with extra 3 in other markets, and think the trade will demand this further change by next

year when they see the benefits arising from the change in rules of No. 2.

Perhaps the absurdity of the inspection rule here the past few years cannot be more forcibly illustrated than by comparison of figures between Chicago and Milwaukee; so far this season Chicago received, say 10,000,000 bushels, of which 74 cars graded No. 2; Milwaukee received about 8,200,000 bushels, of which 3,980 cars graded No. 2.

Respectfully,
Chicago, Ill.

E. O. SEYMOUR.

ADVANTAGES SECURED BY IMPROVED BARLEY RULES.

Editor American Elevator and Grain Trade:—I will as briefly as possible reply to your several interrogatories.

The Chicago barley trade, already of vast dimensions, will be greatly benefited by the change in the inspection rules, first, because, with all other grain which is received at this market and shipped from here, the grade of No. 2 is the leading and the speculative grade. Hence, when No. 2 wheat or corn is spoken of, it is universally known among the trade what that term means, and the quality of the year's crop is gauged by the percentage of the speculative grade. If that percentage is large, the crop is considered first rate in quality; if small, the crop is called inferior in quality. Had the inspection rules during the past season been what they should have been, we would not have had to face the absurdity of having but 57,000 bushels of barley graded No. 2 out of a total of nearly 14,000,000 bushels, especially during a season when as to quality we had the best crop of barley for the past ten years. The right proportion, under the newly adopted rules, would have been nearly 1,000,000 bushels of the total received.

While the receipts of barley are larger than in any other market in the world, I have no doubt that the new rules will considerably increase them, for the shipper will not fear that in case his shipments may strike a dull market they would be sacrificed. Instead, he could order them into store, as he does his No. 2 wheat, await a better market, or if he is so inclined, during a buoyant spell of the market, he can sell his barley for future delivery by grade and not by sample, which at best is always a hazardous proceeding, for both shipper and buyer.

As to the question whether the inspectors will grade barley more satisfactorily under the changed rule, I can hardly give a satisfactory answer. It is hard for me to anticipate the actions and motives of public officials. I can say, however, that inasmuch as their excuse for the unsatisfactory inspection heretofore has been the rigidity of the rules, it is safe to assume that as the rules have been relaxed in favor of a more liberal interpretation, they, the inspectors, should give us a more satisfactory inspection. If they do not they are unfit for their office, and should be removed by the proper authorities.

Yours truly,
Chicago, Ill.

JULIAN KUNE.

EFFECT OF CHANGE IN BARLEY GRADES.

Editor American Elevator and Grain Trade:—In yours of the 6th inst. you state that many of your readers ship barley to this market and are interested in the proposed change in the barley grade, hence you would be pleased to have our opinion of the following:

"In what way will the proposed change prove of advantage to the Chicago barley trade?" Any change that will be to the advantage of the producers and country dealers must of necessity be of advantage to the trade of Chicago.

Your next question, "How will it increase Chicago barley receipts?" By creating increased competition and increased demand in this market for barley.

The next question is: "In what way will it affect the interest of the country barley dealers?" It will enable the country barley dealers to sell for future delivery a grade established by law and by custom. It will create a speculative demand which will enable the country dealer to buy from producers the barley as it is offered to him waiting transportation from the farm to the station, and from the station to the city, and thus be able to sell it in this city at advantageous and remunerative prices.

Your question, "What reason have you to think that inspectors will grade barley more satisfactorily if the changes are made?" The Inspection Department desires to carry out the rules established by the warehouse commissioners for grading barley, and while much is left to the inspector's judgment in construing the rules under

which they are guided, yet they intend to follow the rules as best they can construe them.

The rules for grading barley as they now stand require No. 1 barley should be plump, bright, clean and free from other grain. No. 2 barley should be sound, of healthy color, not plump enough for No. 1, reasonably clean and reasonably free from other grain.

The new rule as adopted by the warehouse commissioners leaves every word as it was in the old rule excepting it takes out the word "sound" in the No. 2 grade. By taking out the word "sound" it will allow the Inspection Department to admit a grade of barley that is of healthy color, not plump enough for No. 1, and reasonably sound, in the grade of No. 2 and this will admit a large share of the barley to No. 2 grade.

Your last question is: "If rule is changed, what per cent. of receipts do you think ought to grade No. 2?" In a quantity of barley like last year's crop, we find that receipts of Milwaukee barley graded about 35 per cent. No. 2. It is fair to presume that the grade as established by the warehouse commission now will enable an average of 35 to 40 per cent. of the barley inspected in this market to grade No. 2.

Yours truly,
Chicago, Ill.

ROSENBAUM BROTHERS.

Points and Figures.

The imports of rice into the United States from the Hawaiian Islands for the month of January, 1891, were 585,000 pounds, against 627,000 the previous year; and for the seven months ending January 31, 6,717,900, against 6,703,400 in the same period of 1889-90, valued respectively at \$352,817 and \$304,962.

Gov. Merriam of Minnesota has apportioned the seed grain provided for by the legislature among the five counties where disastrous crop failures occurred. The sum appropriated was \$25,000, which pays for the grain purchased, of which 24,487 bushels was wheat, 7,828 bushels oats, 390 bushels barley, and 62 bushels flax.

The exports of hops from the United States during January, 1891, amounted to 495,878 pounds, against 860,191 pounds in January of the previous year. The exports during the seven months up to Feb. 1 were 7,861,315 pounds worth \$2,048,442, against 6,546,264 pounds worth \$943,720, for the corresponding months of 1889-90.

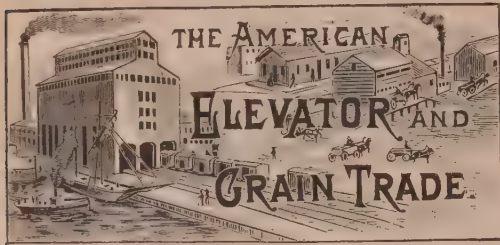
The United States, during the seven months ending Feb. 1, 1891, imported 4,272,079 bushels barley, 1,583 bushels corn, 2,816 bushels oats, 69,100 bushels rye, 339,492 bushels wheat, against 7,225,923 bushels barley, 1,122 bushels corn, 11,232 bushels oats, 72,907 bushels rye and 110,651 bushels wheat, during the same months of 1889-90.

E. J. Northcutt of Pullman, Whitman County, Wash., planted an acre of ground with wheat Oct. 1, 1889, harvested it Aug. 1, 1890, and obtained a yield of 101 bushels 11 pounds of what is known as the "Northcutt Giant" wheat where it was grown. The berry is plump, heavy and of a light amber color. The land on which it grew was not irrigated. A sample was mailed to President Harrison.

Of the large number of varieties of oats tried at the Illinois agricultural experiment station the so-called "rust-proof" red or dun colored varieties from Texas gave the largest yield in 1890 but the smallest yield in 1889. Among the white varieties the Early Dakota and Pringle's Progress gave the largest yields. Of the black varieties Black Russian and New Dakota Gray stood first, with Black Highlander next in order.

In January, 1891, 3,191 tons of hay were imported into the United States and 9 tons of this was exported, against 8,335 tons hay imported in January last year. The imports of hay during the seven months ending Jan. 31, 1891, were 37,871 tons valued at \$309,049, of which 9 tons valued at \$73, were exported, against 68,245 tons hay valued at \$661,226, of which 21 tons worth \$199, were exported, during the corresponding months of 1889-90.

"As the month of June appears on the horizon," says the San Francisco Commercial News, "managers, special and local agents are preparing for the annual struggle over growing grain business. At present everything points to a large harvest, and plenty of business for all hands seems assured. Year by year the practice of insuring standing grain and sacked grain in field is becoming more popular, and premium receipts show a steady and healthy increase."



— PUBLISHED ON THE FIFTEENTH OF EACH MONTH BY —

MITCHELL BROS. COMPANY.

(INCORPORATED.)

— OFFICE —

Howland Block, 184 and 186 Dearborn St.,

CHICAGO, ILL.

Subscription Price, - - - \$1.00 per Year

English and Foreign Subscriptions, - - 1.50 " "

English and Foreign Subscriptions may be sent to W. H. Smith & Son, 186 Strand, London, W. C., Eng.

A. J. MITCHELL, - - - Business Manager.

HARLEY B. MITCHELL, - - - Editor.

ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

CHICAGO, ILL., APRIL 15, 1891.

"THE WORST IMPOSITION."

A gentleman who has been connected with grain carrying trade for a number of years and who is thoroughly conversant with the methods adopted by the trunk line railroads to kill water transportation and compel Western shippers to send all grain to the seaboard by rail, truthfully says: "The way the gigantic railroad-elevator combine is crippling the lake and canal route and actually forcing grain to be shipped by rail, is the worst imposition ever successfully practiced upon a civilized people."

Every Western dealer and shipper should use his influence to secure cheap transportation for grain. To secure the transfer of grain at Buffalo and New York harbor for a reasonable charge elevators and transfer houses must be built by shippers, water transportation companies or persons that will not sell out to the railroad combine. The elevator pool at Buffalo now controls, or did control until recently, all but one elevator and one transfer at that port, also the wharfage which is available as sites for an elevator for transferring grain from lake vessels to canal boats. The pool has a monopoly of everything necessary to control the grain transfer business at that port, and it in turn is controlled by the railroad companies which are directly interested in making the water route to the seaboard as expensive as possible in order that they may receive a lion's share of the traffic. They can not be expected to do otherwise.

At New York harbor the railroad companies own a number of the elevators and control others so that the rate for transferring grain arriving by water is unreasonably high, while that arriving by rail is frequently transferred free of charge.

With cheaper transportation a better price could be paid the producer and our exporters would be able to sell more abroad, as they could sell for less price. Sometimes the grain transfer charges at Buffalo and New York amount to more than the charges for transporting it by water from Chicago to the seaboard, which any dealer will admit is an outrageous imposition. In the near future this exacting combine will be dealt a seri-

ous blow, for a strong company will soon commence to construct elevators, canal boats and transfers to handle the grain brought from the West by its own line of propellers.

GRAIN STORAGE RATES IN ILLINOIS.

A bill was recently introduced in the Illinois Legislature providing for a reduction in the charge for storing grain in warehouses from one and one-fourth cents per bushel to three-fourths of a cent per bushel. Nearly fifteen years ago the greater rate was established as the maximum legal rate. For some time the rate at Chicago has been three-fourths of a cent per bushel for the first ten days, and at Peoria it has been one-half cent for the first fifteen days.

Last year the public elevator men of Chicago gave notice of an advance in storage rates, but the advance met with such general and decided opposition that the old rate for the first storage period is still in force.

This bill should receive not only the approval, but the sincere support of every grain dealer interested. The present rate is high enough to give the public warehousemen sufficient and reasonable profit. If the bill becomes a law it will indirectly regulate storage rates in St. Louis and establish a maximum rate throughout the state of Illinois.

Non-regular public elevators in Illinois will undoubtedly become regular if the bill becomes a law, for by so doing they will increase their business, and as the storage rates will be the same, public elevator men could gain nothing by keeping their houses on the irregular list. So the shorts may have larger stocks, or rather more elevators, to draw from.

WEIGHING GRAIN IN ILLINOIS.

A bill has been introduced in the Illinois Legislature, which, if it becomes a law and is enforced, will go a long way toward remedying the shortage evil. All grain shippers who ship grain to or through Illinois are directly interested in the passage of this bill, and all connected with the trade are anxious to have this gigantic abuse put to an end. If passed some changes in the weighing facilities will be necessary, but they are changes which should be made whether the bill becomes a law or not. The bill provides as follows:

It shall be unlawful for any railroad to make any transfers of grain from one car to another for reshipment without ascertaining the actual net weight of such grain by weighing the same in covered stationary hopper scales capable of weighing the entire contents of each car separately. It shall be the duty of public warehouses to keep a correct record of all grain received and shipped, and the railroad and warehouse commission shall cause an inventory to be made at least twice a year of the grain on hand in any public warehouse for the purpose of ascertaining the overplus of grain not accounted for in the receipts or records of the same. In computing the gross amount of grain or seeds received into any public warehouse up to the time each inventory is taken an allowance of one-tenth of 1 per cent. of the gross receipts may be deducted therefrom to cover shortage arising from shrinkage, loss in handling, or variation in scale. After making this allowance from the gross receipts the amount shipped during the same period shall be deducted. The remainder as shown shall represent the amount on hand. In case any surplus appears said amount shall be turned over to the chief grain inspector, and by him sold, the proceeds to be applied to the grain inspection department expense account for the benefit of the owners of such property by reducing in that manner the general operating expenses of the grain inspection department.

The first provision will put a stop to the using of grain transfer cars and compel the railroad companies to erect grain transfer houses or transfer the grain through elevators. The method of transferring grain from one car to another by means of elevated tracks and scoop shovels will also be stopped. Grain transferred through regular transfer houses is accurately weighed, little, if any, grain is stolen, and none is deducted for future shrinkage. As the work is done under cover the grain is not damaged by rain, hail or snow. The grain transfer houses now in use in this state give perfect satisfaction.

The second part of the bill which is intended

to put a stop to deducting large amounts from the receipts for future shrinkage and for personal account is an excellent provision, and if enforced will stop much of the stealing which the warehousemen try to excuse on the ground that it is necessary. But those who are anxious to make a large sum every few months by stealing grain entrusted to their care can still do so by taking an inventory of the stock on hand and issuing a storage certificate to a colleague or a dummy for the amount of grain in store in excess of the certificates outstanding just previous to the periodical inventories taken by the warehouse commission. However, if the bill is passed it will materially reduce the shortages in this state and be a long step toward correcting the evil.

The bill merits and should receive the hearty support of every grain dealer in the state. Self interest should prompt Illinois grain dealers to take advantage of this excellent opportunity for correcting an outrageous imposition. Write to your representatives in the legislature, and if necessary go and see them. You have influence, use it. Dealers outside the state who ship grain into it are just as deeply interested, and if they have any influence they should use it.

A JUST DECISION.

The Supreme Court of the United States recently decided that railroad companies cannot make a charge for "yardage," and that they are required to furnish suitable yards for live stock the same as they are depots for passengers. Since the Supreme Court has decided that the railroad companies must furnish shipping facilities for stock, it is reasonable to suppose that if a case was taken before it the court would decide that the railroad companies should also furnish facilities for receiving and handling grain in bulk.

At every station where grain is marketed at least one elevator should be kept open the year around. It would be better for the railroad companies in that they would have more grain to transport and dealers at grain centers would have more to handle. Producers who have not a constant market for their grain will sell much less than if they did have such a market.

Most of the railroads discriminate against grain by furnishing receiving and handling facilities for other freight, and not for grain in bulk. This is not fair to the producer or shipper. They also discriminate against elevator men by giving track shippers the same rate as the elevator men who have provided facilities for receiving and handling grain. These very elevators are the means of greatly diminishing the hours of idleness of every railroad company's rolling stock, and of increasing the amount of grain shipped, yet they insist on unjustly discriminating against them. This injustice to the grain trade, and especially the elevator men, can be put at an end by the railroad companies paying a small premium on each bushel of grain shipped from elevators on their lines.

Elevator men understand the business and can handle grain to the greater advantage and satisfaction of the producer and carrier. A few more decisions in the line of the one cited and the railroad companies will be called upon to furnish handling facilities for bulk grain. The best and most satisfactory way of providing these facilities is to pay elevator men a small commission for each bushel of grain loaded from their elevators, and thereby encourage them to handle grain for the public in addition to their own grain.

ALL kinds of amendments are being proposed to the Illinois Railroad and Warehouse Law and dealers will do well to watch closely the proceedings of the legislature lest a law be enacted which will prove detrimental to the grain trade. We give in this issue the gist of several bills which have been introduced. Others have been introduced, among which are, the bill introduced by Mr. Ramsay of St. Clair providing for the amending of the law in regard to the regulation of public warehouses and the inspection of grain, and a bill introduced by Senator Fuller providing for the appointment of state grain inspectors.

LIABILITY OF GRAIN INSPECTORS.

Attention has been recently called to the liability of grain inspectors by an opinion expressed by the Attorney-General of Illinois, in which he states that "the fees of the grain inspection department of the state are not liable for damages by wrong inspection from errors in judgment of the inspectors, but that the party aggrieved must look to the inspector who made the error, and to his bondsmen for the amount." Heretofore, many persons connected with the trade have been of the opinion that the state should pay the damage out of the inspection fees received, and look to the inspector and his bondsmen for the amount. The state has charge of the inspection of grain and fixes the charge for the service rendered, paying its employes, the inspectors, a regular salary the same as any other employer. It can discharge an inspector at will, and does so in cases of inefficiency or poor work. The state does the work, and, it would seem, ought to be responsible for the acts of its servants. The bondsmen whom the state accepts may not have anything when the dealer, who has suffered loss by wrong inspection, sues for damages, and he has no further recourse.

The warehouse law provides that, "Any duly authorized inspector of grain who shall be guilty of neglect of duty, or who shall knowingly or carelessly inspect or grade any grain improperly, * * * shall be fined in a sum not less than \$100 nor more than \$1,000, or shall be imprisoned not less than three nor more than twelve months, or both."

The inspector will be more careful and conscientious in his work with such a penalty hanging over his head, than if the state was responsible for his acts and only had the power of discharging him. What is gained by having the inspector responsible to the grain owner instead of to his employer, the state, is not clear. With many dealers such a state of affairs will undoubtedly reduce the probability of their bringing suit. It would be cheaper and more satisfactory to bear the loss caused.

ANOTHER KANSAS SCHEME.

The Kansas Farmers' Alliance has, it is said, decided to go into the business of building railroads. That is, the alliance proposes that the state shall go into the business for the benefit of the alliance and foot the bills. The idea is for the state to build a trunk line from 250 to 300 miles long and the counties to build a network of branches that will touch every point in the state. The alliance claims that the right of way privileges would be donated in every instance. The alliance cranks have it all figured out that it would cost the state only \$30,000,000; and it is only sorry that Kansas cannot issue \$30,000,000 in printing press money to pay for the road.

Kansas already has more miles of railroad in proportion to its population than any state in the Union. The depression now reigning in the state has been caused as much by the speculative boom created by the building of unnecessary railroads as by anything else. Most of these railroads were built by local aid. Counties and towns voted to bond themselves for the benefit of the roads, taking second mortgage bonds on the roads in return. These second mortgage bonds are now worthless, the first mortgage having been foreclosed. Thus it comes that the patrons of these speculative railroads are obliged to pay rates that will yield interest on the cost of construction; while the people are still paying interest on the bonds voted in aid of the roads.

How in the world the people of Kansas will be benefited by going still further into debt to build more roads, nobody but an alliance man can understand. Kansas has endeavored in a dozen years to put herself in the position of Ohio and Illinois, forgetting that the people of those states have been half a century in doing what Kansas has tried to do in a decade. Kansas is gaining an unenviable reputation as the native home of cranks; and to add untold millions to the burden

that Kansas people are now carrying will not help Kansas, either in purse or reputation.

DOCKAGE AT DULUTH.

The dockage steal is receiving considerable attention in Minnesota, and it has been proposed that a committee from the legislature investigate the charge against certain Duluth elevators that a large amount of wheat was shipped out last year without inspection. Some very sensational rumors have been circulated, but they are too wild and improbable to gain credence with persons connected with the trade. The charge that one steal of 1,000,000 bushels of wheat has been found at Duluth is preposterous, and can serve the purposes of the farmer agitator only. The average annual receipts at Duluth amount to about 13,000,000 bushels.

The charge that 60,000 bushels were shipped out as one year's surplus may be true, but Inspector Clausen, who investigated the matter, says it is not. He is also credited with saying that investigations showed that for five and a half years of state inspection the records showed that Duluth elevators were ahead just one-twenty-fifth of an ounce on the bushel in wheat taken in. If the records be true, the Duluth elevator companies are more honestly and justly managed than most of the companies at our grain centers.

It would be an excellent thing for the grain trade at large if the legislature would investigate the charges against these companies. If the charges be true, the shippers who have suffered loss might secure damages and would guard more strenuously against like losses in the future. If they be false, the companies would be clear of the imputation, and shippers would have greater faith in them than ever before. By all means let the matter be investigated.

THE *Chronicle* gives the following interesting figures regarding the increase in business on the lakes. While it may not be proportionately greater as compared with the increase in business of the railroads, it shows a remarkable increase in business on the lakes. There were in 1890 2,055 vessels, with a net tonnage of 826,360 tons, against 1,997 vessels, with a net tonnage of 634,652 tons in 1886. With less than 3 per cent. in the number of vessels, the tonnage has increased over 30 per cent., while the value of the vessels has increased almost 90 per cent. The gain is mainly in vessels, there now being 110 of these, against 21 in 1886. Then there were six of steel, with an aggregate tonnage of 6,459 tons, and valued at \$694,000, while now there are 68 steel vessels, aggregating 99,457 tons, and costing \$11,964,500.

NORTH DAKOTA WAREHOUSE LAW.

Elsewhere in this issue we publish in full the new warehouse law of North Dakota which went into effect March 7. It has been bitterly opposed by the elevator men of the Northwest, and not without good cause. Section 4 of the law is clearly unconstitutional in that it makes all warehousemen handling grain public warehousemen. If an elevator man desires to operate his elevator as a private house and handle only his own grain, the state cannot interfere. Only houses operated for the purpose of storing and handling grain for the public for a compensation can be regulated by law. The state might as well undertake to regulate the handling of grain in barns of individuals. The idea of requiring a man to give a bond to handle his own grain is preposterous.

Section 11 of the law fixes a maximum rate for handling grain, and it is this provision which the elevator men are fighting. The charge for handling grain is reduced one-half cent per bushel, and the first storage period is increased five days. The elevator men claim that the maximum rate established is less than the cost of handling, so they will be forced to refuse to receive grain not their own. The warehouse commission have tried to come to some agreement with the elevator com-

panies, but have not yet succeeded. However, they have signified their intention of placing as liberal a construction on the law in behalf of the elevators as possible, to induce the companies to operate their houses as public elevators. The commission seems to realize that it cannot force the companies to operate as public elevators on any terms it desires.

Section 13 provides for the repeal of the laws passed by the preceding legislature for the regulation of the handling of grain. They were decided unconstitutional and no effort was made to enforce them. The present law deserves the same fate, for it is clearly unconstitutional.

"THE LOSS IN FARMING."

A dispatch from Lansing, Mich., says: "The farm statistics soon to be issued from the office of the secretary of state will show that the three great crops, wheat, corn and oats, were produced last year at an actual loss. The total cost of the wheat crop was \$18,200,000. Its total value \$16,700,000. The total cost of the corn crop was \$12,250,000. Its total value \$7,250,000. The total cost of the oat crop was \$10,130,000. The total value \$7,390,000. This includes interest on the farms, and, boiled down, means that the farmers of the state lost on their three principal crops all interest on their lands and a considerable outlay of cash besides."

This is eminently unfair. The value of the lands in the southern part of the state is figured at \$56 per acre, and at \$34 per acre further north. It allows nothing for the support of the family, nothing for gardens, and apparently nothing for pasturage and small crops, of which almost every farmer plants more or less. It figures the rate of interest at 7 per cent., while the average productiveness of land the country through is less than 5 per cent.

And what of it? How can any man in any business be guaranteed a profit?

THE Nebraska warehouse bill which we published in our February issue, was changed in regard to some minor matters and passed by both branches of the legislature, but so many errors were made in its engrossment that for a time the Governor declined to sign it. The clause giving the board of transportation the power to establish storage rates was omitted. If it becomes a law it will not be of any benefit to the grain trade of the state or to the producers. It will establish a toll station at Omaha, but will not be the means of establishing a great grain mart there.

BILLS have been introduced in the legislatures of Minnesota and Illinois, which if they are passed will to some extent discourage public elevator men in docking such large amounts from receipts to allow for future shrinkage. The bill introduced in the Minnesota legislature is to compel public elevators to clean up and balance all grain stored therein on Sept. 1 of every year. Any surplus grain found therein shall be sold by the state grain inspector, and the proceeds thereof turned into the state treasury to the account of the grain inspection fund. No mixing houses are to be located near enough to an elevator to be connected with a spout. Only three grades of wheat are to be stored in bulk in such elevators, namely, Nos. 1, 2 and 3 Northern, and Nos. 1 and 2 hard are to be stored in special bins for the different owners, so that the owners can get their own identical wheat when so desired. The provision for the disposition of the surplus grain is all right, but the limitation of the grades of grain which shall be stored in bulk is all wrong. If the owners of other grades of grain have no objection, the public warehouse men should be allowed to put the grain in one bin. If they want it placed in special bins, they can have it so, without the aid of a law. Of course it will cost a little more than at regular storage rates, but it should cost more, law or no law, unless a grain owner has enough to fill the bin.

Grain Dealers' Associations.

KANSAS AND NEBRASKA GRAIN DEALERS' ELEVATOR ASSOCIATION.

President, MASON GREGG, Lincoln, Neb.; *Vice-President*, FRANK LOWER, Council Grove, Kan.; *Secretary*, W. T. CAYWOOD, Clifton, Kan.; *Treasurer*, O. A. COOPER, Humboldt, Neb.

GRAIN SHIPPERS' ASSOCIATION OF NORTHWEST IOWA.

President, T. M. C. LOGAN, River Sioux; *Vice-President*, H. HANSON, Odebolt; *Secretary and Treasurer*, F. D. BABCOCK, Ida Grove; *Assistant Secretary*, F. G. BUTLER, Schaller.

Executive Committee, E. A. ABBOTT, Des Moines; J. Y. CAMPFIELD, Sac City, and T. M. CATHCART, Kingsley.

GRAIN DEALERS' ASSOCIATION OF OHIO.

President, J. W. McCORD, Columbus, Ohio; *Vice President*, L. BOGGS, Kingston; *Secretary*, E. C. WAGNER, Columbus; *Treasurer*, D. McALLISTER, Columbus.

Board of Managers, C. D. MILLER, Newark; DILL WEIGAND, South Bloomfield; E. M. BENNETT, JR., Urbana; C. W. PRINGLE, Lilly Chapel, and H. CHAMBERS, Worthington.

Legislative Committee, J. W. McCORD, D. McALLISTER, E. C. WAGNER, W. A. HARDESTY, and E. C. BEACHALL.

ILLINOIS GRAIN MERCHANTS' INSURANCE AND PROTECTIVE SOCIETY.

President ISAAC VAN ORDSTRAND, Hawarden; *Secretary and General Manager*, S. K. MARSTON, Odarga; *Vice-President*, JOHN STEWART; *Treasurer*, G. C. McFADDEN, Havana.

Executive Committee, S. K. MARSTON, D. H. CURRY and F. M. PRATT.

Committee on Claims, D. M. BRUNER, J. F. ZAHN, H. C. MOWREY.

Committee on Legislation, W. ARMINGTON, V. R. ST. JOHN, C. C. ALDRICH.

EDITORIAL MENTION

WE will be pleased to have you send us news of interest to the grain trade.

Do NOT fail to make use of our department headed "Miscellaneous Notices," whenever you can.

EVERY man connected with the grain trade should read the AMERICAN ELEVATOR AND GRAIN TRADE.

MARTIN D. STEVERS & Co., 218 La Salle street, Chicago, offer for sale in this issue, four elevators situated in Western Iowa.

COMMUNE with your brother grain dealers through the communicated columns of the AMERICAN ELEVATOR AND GRAIN TRADE.

THE new Welland Canal will be opened for navigation April 20, and the water route for grain from the Northwest to the seaboard will be better than ever.

BUFFALO is actually taking steps toward providing first-class facilities for transferring grain from car to car, and transfer houses will probably be erected soon.

THE Minnesota Legislature has enacted a law declaring elevators and warehouses taxable property. It seems that heretofore some have escaped taxation because they were on railroad land.

A. B. COLTON of the Racine Hardware Manufacturing Company of Racine, Wis., favored us with a call recently. Mr. Colton was treasurer of the Frost Manufacturing Company of Galesburg, Ill., for eight years, but has sold his interest in

that company and now has charge of the sales of the engine department of the Racine Hardware Manufacturing Company.

HERETOFORE Flax Inspector Stevens of Chicago has only included the flaxseed inspected in his reports of the receipts and shipments, but hereafter his reports will include all flaxseed received and shipped.

THE York Foundry and Engine Company, manufacturers and dealers in elevator supplies, of York, Neb., whose advertisement appears in this issue, are prepared to supply the wants of the trade on short notice.

By increasing your knowledge of the business you follow you increase the probabilities of your success. Make use of every source of information and subscribe for the AMERICAN ELEVATOR AND GRAIN TRADE.

MERCHANT & Co. of Philadelphia, importers and dealers in tin plates, metals and roofing plates, have our thanks for a beautiful colored sketch showing the greatest engineering achievements of the present century.

HAY in some of the Mississippi Valley states is hay with a big H, and the dealer who has a good supply, bought soon after harvest, is considering whether he will go into the banking business or start a lottery with bales of hay as prizes.

If you want to buy or sell anything, want a partner, location, help or a position, make it known to the trade through the columns of the only journal devoted to the elevator and grain interests—the AMERICAN ELEVATOR AND GRAIN TRADE.

TEXAS will soon have a railroad commission to regulate rates and adjust differences between carriers and shippers. The law does not provide for tyrannical ruling of the railroads, and gives them the right to appeal from the decision of the commission.

WE have made arrangements whereby we can furnish the revised edition of Robinson's Telegraph Cipher, in leather binding, for \$2, in paper \$1.50, postpaid. We will be pleased to hear from any of our readers desiring a copy of this excellent cipher.

AT a recent meeting of the Trans-Missouri Freight Association the joint grain agency for Kansas was discussed, but no action taken. Dealers of that state should encourage the railroads in the formation of such an agency, as it would undoubtedly be the means of facilitating shipments.

THE Government crop report for April, published elsewhere in this issue, shows winter wheat to be in an unusually good condition, in fact it is in better condition than for any corresponding time since 1882. Good prospects at home, poor abroad. May it continue in this line and our exports be large.

THE warehouse committee of the Minnesota legislature is considering a proposition to erect state warehouses for grain at the grain centers of that state. The elevator men should reciprocate by introducing a bill providing that all vacant land should be purchased and utilized by the state for producing grain.

MINNESOTA grain inspectors, it seems, leave the cars open when they have finished their inspections, so that the samplers can easily obtain a sample of the grain. This practice, it is claimed, is responsible for many large shortages, as it tempts boys and thieves to steal the grain. It has been proposed that the state inspectors sample the grain when they inspect it, and then re-seal the cars. No good objections can be raised against this plan, and it would surely reduce the

shortages. In Chicago the samplers employed by the grain receivers, sample all grain below the contract grade, and the inspectors refasten the cars before leaving that track. Anything that will materially reduce shortages will be received by country grain shippers with open arms.

A PARTNERSHIP has been arranged between G. T. and A. E. Honstain, under the firm name of Honstain Bros. for the purpose of contracting for the building and equipment of grain elevators. The headquarters of the new firm are 424 Beery Block, Minneapolis, Minn. Messrs. Honstain Bros. will furnish plans and estimates on application, and solicit a fair share of the public's patronage.

THE Regan Vapor Electro Engine, which uses gas or gasoline for fuel, is said to be especially adapted to the uses of elevator men. It is guaranteed not to cost over 2 cents per hour per horse power. It is made in sizes giving from one-half to ten-horse power. There is "no boiler, no fire, no flame, no danger." The manufacturers are Thomas Kane & Co., 137 and 139 Wabash avenue, Chicago.

ONCE again the Soo is carrying the bulk of the grain shipped from the Northwest to the seaboard and as usual is cutting rates. The Soo maintains rates when it can get enough traffic to keep its rolling stock busy but cuts rates when it cannot. It will always be so. The road was built for carrying through grain and grain can be transported at a less cost than on the lines of its competitors.

IGNATIUS DONNELLY's bill providing for the submission of an amendment to Minnesota's constitution to the people, has been killed. The bill provided for an amendment to that part of the constitution relating to railroads and warehouses, and contained several very good provisions, but like other things which have come from the same source as the cryptogram, it contained much that was impractical, visionary and ridiculous.

THE case of Alfred M. Hoyt and others of the Munger-Wheeler elevator syndicate of Chicago against the Chicago, Milwaukee & St. Paul Railroad Company, has again got into the courts and judgment has been entered against the railroad company for \$68,370.45. A number of years ago elevators of over 1,000,000 bushels' capacity were erected on the line of the railroad company in Chicago by the plaintiffs and the railroad company agreed to deliver 5,000,000 bushels a year to the elevators or pay a forfeiture of 1 cent a bushel for the amount it failed to deliver. In 1888 the amount fell short over 3,000,000 bushels and nearly as much the following year. Suits were brought to recover by the elevator proprietors and they won in each case. Judgment has now been entered but the plaintiffs have not yet secured their money.

MR. B. F. RYER, 63-65 South Canal street, Chicago, Ill., manager western branch of Messrs. Huntley, Cranson & Hammond, Silver Creek, N. Y., has just closed a contract to furnish a full line of the Monitor Separators, manufactured by this firm, for the new cleaning elevator of the St. Anthony Elevator Company, now in course of construction at Minneapolis, Minn. This elevator will be equipped with eight of the largest size machines built by them, and will have a total cleaning capacity of 20,000 bushels of wheat per hour. The "Monitors" were selected after a close inspection of all the different makes of machines for this purpose. In fact, to obtain the best, the St. Anthony Elevator Company sent men of long and tried experience to personally examine and report on the various machines in operation. That the "Monitors" carried off the prize is certainly a big card for the manufacturers, and they can well feel proud. We recorded not long since the fact that the Monitors were selected for the 1,000,000-bushel elevator of F. H. Peavey & Co. at Kansas City, Mo., and the 500,000-bushel house of the Santa Fe R. R. Company at Argentine, Kan.

THE Chicago vessel owners anticipate a strike by the seamen's union, and have arranged to engage men irrespective of the union rules. The vessel owners made a proposition to base wages on rate, but the union refused to entertain it.

THE Chesapeake & Ohio Railroad has filed a tariff with the Inter-State Commission quoting rates from Chicago to the seaboard on grain, flour and lard, for export, 5 cents per 100 pounds lower than the regular rates of the lines in the Central Traffic Association.

At Armourdale between twenty-five and thirty men and boys were arrested charged with stealing grain from cars. The stealing has been carried on for months, and thousands of bushels of grain have been stolen. It is thought that some grain dealers will be implicated when the thieves come to trial.

ON March 30 a federal grand jury at Indianapolis returned indictments against officials of the Big Four road for violation of the Inter-State Commerce Law. It seems that a number of grain shippers at La Fayette, who had their business ruined because competitors were enabled to secure concessions in rates from the Big Four, made the complaints which caused the indictments.

In a list of sixty fires in the United States in 1890, in each of which the loss was over \$200,000, the *Standard* of Boston enumerates the burning of a grain elevator at Baltimore, on Jan. 13, loss \$500,000; the starch factory at Chesterfield, Ia., April 14, loss \$300,000; Freeman's mill and elevator at La Crosse, Wis., Aug. 2, loss \$300,000; elevator at Ogdensburg, N. Y., Sept. 9, loss \$500,000; elevator at Buffalo, N. Y., Nov. 6, loss \$250,000.

WE are more than pleased to note that the Illinois Senate has passed a bill providing that a bounty of two cents shall be paid for every English sparrow killed in the state. Their destruction, if opposed at all, will be by a few sentimentalists. The grain producers who suffer by the raids of these dirty gluttons will be well pleased. Few are the grain growing counties of England that do not suffer a loss of two or three million dollars a year from the work of these pests.

A BILL, which is published in this issue, has been introduced in both branches of the Illinois Legislature providing for the establishment of grain inspection districts, the appointment of grain inspectors and registrars and changes in the classification of warehouses. If the bill becomes a law, state inspection departments will undoubtedly be established at Peoria and East St. Louis. Under the present law it is a very easy matter for dealers to secure the establishment of state inspection at places where it will facilitate the handling of grain. Peoria and East St. Louis could secure state inspection now if they desired it, but they do not. The passage of this bill will compel these points to accept of it and enable the warehouse commission to establish useless and expensive inspection districts. Nothing is to be gained by the passage of the bill.

THE Grain Receivers' Association of Chicago can do country shippers a great good and advance the interests of Chicago's grain trade by inducing the railroad officials to compel their employes in charge of the grain transfer cars to sweep clean all cars which they unload and place all the grain in one car. At present the unloaders leave all the way from a peck to two bushels in a car and later they sweep it clean and place "their" grain by itself. One of the Pittsburg & Ft. Wayne Railroad Company's transfer cars is followed by a small flat car upon which the sacked sweepings are loaded. Recently a man employed in transferring grain at this point remodeled his house to provide special facilities for storing his stealings at home. If any one doubts that much grain is stolen in the transfer yards we beg of him to visit the yards and see for him-

self. In most cases it is done openly. Much grain is also lost by carelessness on the part of the transfer men.

A BILL has been introduced in the Illinois Legislature providing for an amendment to the landlord lien law, which should receive the active support of every grain buyer in the state. Elsewhere in this issue is published the bill as introduced in the Senate. If the bill is passed it will prevent grain buyers from being imposed upon by unscrupulous farmers whose grain is incumbered. Buyers should note the fact that this protection is withdrawn from those who buy crops on the premises where grown. What is meant by regular buyers is not clear. Whether the track shippers, who buy only during the busy season, would be classed as regular buyers is a question that would have to be decided by the courts. The bill can be greatly improved by making it more explicit on this point.

THE Illinois Railroad and Warehouse Commission have adopted the proposed change in the rules governing the inspection of barley at Chicago. Elsewhere in this issue we give the rules as changed to take effect on the new crop. We also give in the "Communicated" department the opinions of some of the prominent Chicago dealers on the change. No one seems to doubt that the change will prove advantageous to the trade at large and especially to the country dealers, as it will enable them to hedge against a larger percentage of their barley. If country dealers or any one connected with the trade, know of any good reason why the change should not have been made, we would like to hear from them. The change gives the grade known as No. 2 barley a wider range so that the best of the No. 3 can be placed in it. The grain in store will not be affected.

MISSOURI politicians have robbed the state grain inspection department of its efficiency, and dealers are becoming dissatisfied. Inspector O'Shea will be let out in November and another politician will undoubtedly succeed him. At Kansas City the bulk of the grain is now being inspected just across the line in Kansas. If the Kansas inspectors give satisfaction the politicians at Kansas City, Mo., who inspect grain by telephone, will be looking for a new job. It has been proposed to relieve the railroad commission of the supervision of the state grain inspection department and elect the chief inspector for four years. The millers and grain dealers of the state should prevent the making of the office of chief inspector an elective one. If elected he is sure to be a politician, and his qualifications for the office will not be considered. Poor and unreliable service would be the rule, and satisfactory service, if ever obtained, would be the exception.

It is possible the Kershaw failure may be opened again, as the case is on trial before Judge Gresham. Hill, Flertzheim & Co. of Milwaukee filed a bill June 20, 1889, in the United States Circuit Court to establish a limited partnership between Charles J. Kershaw, Hamilton Dewar and Charles B. Eggleston, to set aside preferences for over a million dollars, and for the appointment of a receiver. The bill alleged that C. J. Kershaw & Co. were indebted to complainants in \$130,000. Intervening petitions were filed in this suit by the following parties: Jackson Bros. & Co., \$15,000; W. S. McCrea & Co., \$2,000; J. A. Edwards & Co., \$15,000, and W. F. Johnson & Co., \$18,000. A settlement was made between Hill, Flertzheim & Co. and Kershaw & Co. The case now before Judge Gresham concerns the intervening petitions. It is claimed that the members of C. J. Kershaw & Co. entered into a limited partnership Oct. 29, 1886, that they incurred pecuniary obligations for over \$1,000,000, and that in 1887 the firm failed and alleged that it was able to pay only 30 cents on the dollar. C. J. Kershaw & Co. made the following preferences: American Exchange Bank of Chicago, \$500,000; Irwin, Green & Co., \$200,000; Charles B. Eggle-

ton, special partner, \$100,000; David W. Irwin, \$200,000, and Alexander L. Dewar, \$200,000. These parties are asked to refund what money they have received on their claims to enable the payment of the intervening claims.

ONE of the most disgraceful acts that the press has been called upon to report, is the attempt of well-to-do Western farmers to obtain free seed voted by the state legislatures. One man in Phillips county, Kan., who afterward admitted that he had 200 head of cattle and \$30,000 in money, an inheritance that he had not touched, certified that he was too poor to buy seed and got seed wheat for nothing. There is no mistaking the tone of the class of farmers who are "on top" in the West. They believe that the community ought to guarantee them a profitable business, and they act upon their belief. Some of the Kansas farmers who have received seed wheat sold the wheat before leaving town and pocketed the proceeds.

DOTS AND DASHES.

Read the AMERICAN ELEVATOR AND GRAIN TRADE, published the 15th of each month. If you subscribe for it and the *American Miller*, both will only cost you \$1.50 per year.

The value of the broom corn exported from the United States for the seven months ending Jan. 31, 1891, was \$73,540, against \$69,879 for the same seven months a year previous.

The exports of wheat, including flour reduced to wheat, from the port of San Francisco during the nine months ending April 1, 1891, amounted to 13,170,000 centals, valued at \$18,213,000.

Ten years ago Manitoba had but 2,250 actual farmers with an area under crop of less than a quarter of a million acres. This spring will witness 20,000 farms cultivating nearly a million and a quarter acres of grain land.

The National Irrigation Commission has commenced operations in North Dakota. It will investigate, among other things, the altitude and trend of the water planes and artesian supplies, and measure the chief wells of the state.

The Kansas City *Star* says: "There is some danger of a hay famine in Kansas City and its tributary territory. The hay crop last year in Missouri, Iowa, Nebraska and Kansas was not more than a third as large as the over liberal supply of the year before."

The first of April there was stored at Buffalo, N. Y., 298,197 bushels wheat, 32,137 bushels corn, 112,789 bushels oats, 23,295 bushels rye, 295,931 bushels barley. This is much lower than at other points, and only about one-third of what there was at the same time last year.

According to reports received by the Omaha Elevator Company, more wheat will be sown in Nebraska this spring than last. In the southern part of the state the increase in acreage of wheat planted will be 15 per cent., of oats 15 per cent. and corn 5 per cent. In the central and northern parts of the state the acreage sown will be, wheat 15 per cent. more, oats 5 per cent. less and corn 13 per cent. more than last year. Flax and other grains will show a considerable decrease.

Judge Wakefield of Iowa has rendered a decision in the case of D. J. Carpenter of Beloit, Ia., against the Chicago, Milwaukee & St. Paul road, in which he holds that that part of the Iowa law is unconstitutional which makes state commerce of freight shipments originating and ending in the state, but passing through another state. He holds that such shipments are inter-state, and beyond the jurisdiction of the state to regulate and control. The commissioner had held to a contrary view.

The United States in February shipped 117,574 bushels of corn and 7,059 bushels of wheat to British North America, valued respectively at \$60,093 and \$4,103, against 184,357 bushels of corn and 14,428 bushels of wheat, valued respectively at \$57,314 and \$11,319 in February last year. The exports to British North America for the eight months closing with February included 3,529,852 bushels of corn, valued at \$1,709,162, and 1,573,275 bushels of wheat, valued at \$1,519,277, against 5,435,612 bushels of corn, valued at \$1,985,424, and 1,881,648 bushels of wheat valued at \$1,535,080, for the same period in 1889-90.

A WAREHOUSE WITHOUT SHIPPING FACILITIES.

It seems that at some Minnesota points it is next to impossible to obtain the permission of the railway company or the railroad commission to operate a grain elevator along the railway company's right of way. As an instance of the obstacles met with in trying to secure permission to establish a house for shipping grain we cite the case of W. F. Myers of Wells, Minn. The complaint filed by Mr. Myers last November was as follows:

To the Hon. Railroad and Warehouse Commissioners:

The undersigned respectfully presents for your consideration and official action the following facts:

That about the last of July or first of August of this year he applied to W. Irwin, superintendent of S. M. Division of C., M. & St. P. R. R. Co. in person requesting a sidetrack to a certain lot lying adjacent to the company's right of way (not main line, but right of way of bridge department track) in the village of Wells. Irwin made full memoranda and agreed to advise your petitioner that he might take action toward the placing of a warehouse on said lot. After waiting two or three weeks and hearing nothing from Irwin, your petitioner wrote H. R. Williams, Assistant General Superintendent of said company at Minneapolis, making the same request. The letter received in reply from Mr. Williams dated Aug. 24, 1890, is as follows: "Replying to your favor of the 22d inst. The matter mentioned has been referred to General Manager, by whom such matters have to be decided. We have all the work we can attend to this fall and I hardly think it will be possible to make the change in tracks which you desire, besides with the number of grain houses now at Wells I hardly see any demand for any more. I will, however, advise you definitely as soon as the General Manager advises me."

[Signed]

H. R. WILLIAMS,
Assistant General Superintendent.

The warehouse which your petitioner desired to place on this lot was already erected but was to be moved as soon as this question was settled. Receiving no reply further from any source and the season being fast passing, your petitioner wrote Mr. Irwin about the middle of September that he was about to move his warehouse and unless some objection was made he would place it partly on the company's land so as to be accessible to the track as laid, it being in the nature of a sidetrack, and thereupon receiving no reply, on about Sept. 20 your petitioner moved his warehouse partly on the company's land and adjacent to the track as laid. As soon as the warehouse was so placed Mr. Irwin ordered it removed and refused to confer with your petitioner as to where it might be allowed to stand or be removed to. Your petitioner thereupon on Sept. 22 caused it to be placed in position on his lot adjacent to the company's right of way where it has since been and now is.

That thereupon he demanded that a sidetrack be built to accommodate the business of the warehouse for the purpose of buying and shipping grain therefrom, but the company have wholly failed or refused to build it. About the first of the month there being about three carloads of grain in the warehouse for shipment your petitioner notified Irwin to that effect and asked about a sidetrack and the depot agent received from him a telegram as follows: "Please say to Mr. Myers that we will not build any sidetrack to his building until we can see the building and judge what it will accommodate in the way of grain. We will not run the siding to the alleged building he has there now and do not think we will build any siding of any kind before next spring owing to the lateness of the season. Mr. Myers has had several months to decide on what he was going to do. As he did not put up the building as proposed to can do nothing more about it at present."

[Signed]

H. R. WILLIAMS.

The warehouse is —by— and is substantial and complete as the ordinary warehouse and as to any proposed building it was distinctly understood that this building was the one to be placed on said lot and used by your petitioner.

The striking manner in which the letter and spirit of the law has been violated, the insolence and want of ordinary courtesy which has characterized every act of every official from Williams to those through whom local communications have been made has impressed upon your petitioner the fact that he was discriminated against and intentionally so. Nothing can be said against the location as other grain houses are all around it and far enough away so that it clears the requisite distance, and as to character of building that is a matter of easy investigation by you and is no concern of the railroad company.

Your petitioner requests that the company be prosecuted and makes the suggestion that the county attorney of this county is understood to be in the employ and rides upon the pass of the company and that the prosecution might better be conducted by assistant counsel. Your petitioner further states that the building of a track is now a subordinate consideration, although of vital necessity to the use of said building, but that the matter being one of damage he will undertake to recover in a private way, but that this kind of treatment calls for a public action and application of the law especially at this point where it is but a repetition of the treatment received by every person attempting to start a grain warehouse here manifestly in the interest of what are styled the line men, Messrs. Hodges & Hyde and Cargill Bros.

Your petitioner offers to furnish all necessary proofs touching the matter herein or to render such further information as may be desired.

Yours respectfully,

W. F. MYERS,
Supplemental.

Dated Nov. 11, 1890, Wells, Minn.

Your petitioner asks that an order be made requiring said company to build a sidetrack to said warehouse.

W. F. MYERS.

Mr. Myers says: "Three months after the complaint was filed the Railroad Commission held a hearing at Wells, which was a great farce. They sat like a court, ruling on evidence, sustaining the objections of the attorneys, or otherwise, refusing to hear hearsay evidence which I wished particularly to introduce on the subject of there being plenty of warehouse room, although that, of course, was no one's business, as I suppose there is no law as to the number of men who shall engage in the business of grain buying and shipping.

"I, however, wished to show that the company's state-

ment in this regard was false, and had several of the leading business men of the city who testified that there were times when the warehouses were all full and farmers compelled to sell to the mill at a reduced price because no one else could take the grain.

"This evidence was not allowed because these merchants had not looked in on the warehouses and seen that they were full and had gained their knowledge from what farmers had told them.

"It is now nine months since I made application for that sidetrack and for about six months of the time one warehouse has been full of grain which I have been anxious to ship. Have we any rights or shall the railway companies dictate where and when a man shall engage in business and what kind of business it shall be?"

NEBRASKA'S WAREHOUSE BILL.

Mr. C. T. Brown of Omaha does not favor the warehouse law proposed for Nebraska. He says: I have noticed in the paper some comments on the proposed warehouse law that is now being considered by our legislature, and my opinion is that the bill, as it now reads, unless amended, will not meet the requirements of the people for whom it is alleged to have been introduced.

My understanding is that we want a warehouse law that will enable the producer to store his crop, in order that he may raise money upon it, thereby enabling him to hold it over, and not be forced to sell at the low price usually paid the first few months immediately following the harvesting of his crop.

I notice the present bill provides for three classes of warehouses, namely, A, B and C. Classes A and B are for grain, and class C, I take it, for other kinds of property. Class A must be located in cities of the metropolitan class, and the rates of storage, rules for inspection and duties for all concerned are fully set forth in the bill. Class B may be located in other places, but the rules of storage and duties are not so clearly set forth.

Let us consider what benefits the producers are likely to derive from the use of warehouses of either class A or B.

What producers want are public warehouses in which they may store their corn, receiving receipts for the same, upon which they may borrow money, thus enabling them to carry their corn to some future time for a better price, which, it is claimed, they may be able to realize the following summer. This cannot be done safely in large elevators or in large quantities when shelled.

I will venture to say there is not one farmer or dealer in a hundred who would run the risk of carrying winter shelled corn through the germinating season in large warehouses or in large quantities. Notwithstanding Nebraska corn is considered the best in the world, it is not safe to attempt to carry it through the spring months if shelled.

If this is true, how are the producers going to reap any benefit from the passage of this bill for the first six months after the harvesting of their corn crop? How are the operators of such elevators going to get any corn to store in them during those months? Some will say corn can be safely stored for the first five or six months after its harvest in a shelled condition. I will grant that, but as a rule our Nebraska corn can be sold for a better price during the winter months, for immediate shipment, than for deferred shipment, and the principal use to which storage is put during the winter is to hold the corn until cars can be had in which to ship it.

Our corn is usually of such good quality that exporters want it, and have been paying a better price for it for several years, than for the corn of any other state, and those exporters always prefer prompt shipment. As a rule better prices have been paid for corn in Nebraska for several years during the early winter than in the spring, giving us another reason why we should ship as soon as possible, if it has to be shipped before the germinating season.

This being the case, the farmers, dealers, elevator owners or operators will derive no benefit from such a law during the first six or seven months following the harvesting of the corn crop. It may readily be seen that the farmers or dealers will derive no benefit whatever from such a law, for the farmer or dealer who carries his corn through until May or June without being forced to sell, can better afford to continue to carry it in the same cribs than to shell it, and pay storage until he gets ready to sell; this is plain to any farmer or dealer, and needs no comment from me.

In view of the above is there any one who would seriously consider building a public elevator as an investment, in a state, the principal product of which is corn? No one could expect it to pay expenses one month in six.

D. A. Martin says that Milwaukee is the dumping ground for three-fourths of the wheat damaged by fire or water in the West, and that most of its millers think No. 3 a high grade. Milwaukee is a good market for burned wheat, and the dealers of that city secure most of the grain damaged in elevator fires.

In January, 1891, 398,276 pounds of hops were imported into the United States, of which 42,411 pounds were exported, against 1,008,580 pounds hops, 26,441 pounds exported in January last year. For the seven months up to Feb. 1, 1891, 2,812,696 pounds hops valued at \$1,249,088, of which 154,607 pounds worth \$53,501, were exported, were imported into the United States, against 4,372,318 pounds hops valued at \$692,028, of which 284,467 worth \$46,633, were exported for the same months in 1889-90.

GRAIN "GAMBLING."

It is alleged by some of the men who are plying as friends of the farmers, that if what they call gambling in produce could be suppressed, a most important advantage would be gained in the direction of steadying prices. They say it is the rush and pressure of gambling offers to buy or sell in the speculative markets that cause the greater part of the fluctuations reported, and that changes in actual crop conditions would not so much affect the range of quotations if the other element were done away with.

Unfortunately the facts do not bear out the theory. It is well known that while the Chicago Board of Trade was established in 1848, it was little more than a nominal organization previous to the war. It was more of a deliberative than a trading body, and the "option" was a rarity. Speculation in grain and other produce sprung into life in Chicago as a consequence of the changes in quoted values on a currency basis due to the fluctuations in the premium on gold, and because of expected war legislation that would directly affect prices. Before that time the farmer offered his property to the merchant in this city, and the price to be paid for any particular parcel of grain was generally determined "over the pile." Yet the commercial reports published by the *Democratic Press* in 1858 show that the average price paid for spring wheat in this city was about 43½ cents per bushel for 1852, for the next year 74 cents, and that in 1855 it was \$1.36, the average price for the latter twelve months being fully three times that of three years previously. From that high altitude it fell to 93 cents in 1857, to 71 cents in 1858, and 73½ in 1861. It was only about 3 cents higher than that for the whole of 1862, and then began the speculative rise which carried the annual average up to \$2 for 1867, the latter being equal to scarcely \$1.45 in gold.

The price fluctuations on a specie basis have not taken so wide a range in the nearly thirty years that have elapsed since the close of 1861 as those of the ten years previous, neither has the amount obtainable by the farmer sunk to the low-water mark of 1852. The record is thus in flat contradiction to the plea that speculation in wheat has injured the farmer. But it would not be difficult to show that the grain grading methods and warehousing regulations introduced to meet the requirements of the speculative trade had a great deal to do with the systematizing of the business which alone rendered it possible to find a big foreign market for the surplus, and thus lessen the effects of a home glut in forcing the farmer to take less than 40 cents for his wheat, as was the case with a large proportion of that marketed in 1852, the 43½ above given being the average for the whole twelve months.—*Chicago Tribune*.

FLAX AND HEMP IN MINNESOTA.

"Flax and Hemp in Minnesota" is the title of a pamphlet of seventy pages just issued, the same being the report of the house committee appointed in January to investigate the practicability of flax and hemp culture in this state. This report is one that should be placed in the hands of every farmer in the state, for it points out the inestimable value of a hitherto neglected source of wealth. Flax is now cultivated in the West for its seed alone. For this purpose 1,000,000 acres are sown annually in the states of Ohio, Indiana, Illinois, Wisconsin, Iowa, Minnesota, Kansas and Nebraska. The aggregate acreage under flax in Europe, says this report, is about 3,344,300 acres, producing annually about 457,675 tons of fiber. It is therefore estimated that the states named would, with proper care in cultivation, produce 160,000 tons of fiber, worth \$300 per ton, making the total value of the product \$48,000,000. The committee points out the undeniable fact that with the proper culture of flax would come the establishment of linen mills, and this country would soon cease sending \$25,000,000 abroad every year for linen.

"No other part of the inhabited globe," says the committee, "offers so many advantages to this branch of agriculture, and its development into a thriving industry, as our Western states. We have an admirable climate, fertile soil, abundant water power, the most perfect machinery for harvesting, preparing the fiber, and for any other purpose, ingenuity and a spirit of enterprise, in short, every condition is present to insure success."

The report explains the methods of flax culture employed in Belgium and Ireland, and gives exhaustive instructions for its successful cultivation on Minnesota soil.

The visible supply of grain April 11, as compiled by the New York Produce Exchange, was as follows: Wheat 22,538,637 bushels; increase, 54,727. Corn, 22,338,387 bushels; decrease, 332,846. Oats, 2,593,614 bushels; increase, 48,277. Rye, 456,058 bushels; increase, 653. Barley, 1,040,063; decrease, 235,630.

The glucose manufacturers talk of stopping operations. The glucose business, or the making of grape sugar and syrup from Indian corn, has received a severe setback by the removal of the duties on imported raw sugar. The only demand for glucose will be from candy manufacturers. Heretofore nine-tenths of the table syrup has been corn syrup. The closing of the factories will affect the localities where they are situated and local corn markets. With corn at 50 cents a bushel the glucose men cannot compete with the sugar refiners who can produce syrup at a cost of 20 cents a gallon. Glucose factories consumed last year an average of 70,000 bushels of corn daily.

WATERWAYS

Navigation has opened on the St. Lawrence River, it being almost free from floating ice.

Vessels have been chartered at Duluth to carry about 600,000 bushels grain at $2\frac{3}{4}$ and $2\frac{1}{2}$ cents.

The Illinois & Michigan Canal was opened from Chicago to La Salle April 1. Boats are allowed to draw four feet eight inches.

A line of lake propellers will be run by the Toledo, St. Louis & Kansas City R. way this season between Toledo and Buffalo to carry grain.

Navigation in the Sault Ste. Marie Canal can open about April 20. The depth of water is 14 feet 1 inch, 6 inches lower than in April last year.

The Diamond Jo Line has bought the warehouses and other property of the St. Louis and St. Paul Packet Company, at twenty-six river points on the Mississippi River.

The Cleveland Vessel Owners' Association and the Detroit Vessel Owners' Association have decided not to start their boats until May 15, in the hope of securing higher freight rates.

The engineers' estimates place the cost of the Nicaragua Canal at \$100,000,000, including all expenses, and the annual traffic at 7,000,000 tons, about as much as now passes the Sault Ste. Marie Canal each year.

The Canadian minister of railways and canals is considering the question of asking parliament to vote an appropriation to make a lock of the new canal at Sault Ste. Marie 100 feet wide and 20 feet instead of 18 feet deep.

The ice in the west end of the Straits of Mackinaw is solid, and nothing but a strong east or northeast wind can clear it out so as to allow boats to pass. The indications are that the straits will not be open before April 25.

A canal forwarding company is to be organized at Buffalo, to have agencies at Chicago, Duluth, Toledo, Milwaukee and Detroit, to consign freight through from those points to Eastern ports by the canal from Buffalo.

A canal is to be built in Delaware on the Atlantic Coast, starting from White Oak Point, on Rehoboth Bay, running northeast to Lewes Creek, one mile east of Lewes, Del., then north along the creek to Delaware Bay opposite Lewes.

The Western Society of Engineers held a meeting in Chicago April 8 at which a paper by E. L. Corthell on "An Enlarged Waterway Between the Great Lakes and the Atlantic Seaboard" was discussed. Others read papers on the same subject.

The Canadian Government has reduced to 2 cents a ton the tolls on wheat and other cereals passing through the Welland and St. Lawrence canals to Montreal or ports further east. This reduction applies to United States vessels as well as Canadian.

When the enlarged waterway between the great lakes and the Atlantic Ocean is constructed, according to the plans of E. L. Corthell, the civil engineer, Western shippers will enjoy cheap transportation for grain and other products to all foreign ports.

The Canadian Government proposes to abandon the present Beauharnois Canal for a new one to be built on the north shore of the St. Lawrence River at Coteau. It is to be fourteen miles long, with six locks, each 170x45 feet, and will be 100 feet wide at the bottom.

The Government of Nicaragua may refuse to accept the Nicaragua Canal Bill, as presented to the United States Senate by Senator Sherman, because the bill implies that the Zeledon Menocal contract has been rejected by Nicaragua and recognized by the United States.

Everything points to an excessively dull season in lake traffic. The fleet which left the port of Chicago April 10, last year, carried 4,500,000 bushels of grain. This year shippers are holding off for the break which they think will occur and only about a million bushels' capacity has been chartered. No activity is manifested in shipping circles.

When there is a proposition for a state to expend money in building a canal, our esteemed railway contemporaries immediately proceed to show how much cheaper it would be to build a railroad. And generally speaking, they are right. But the question is always deeper than this. It isn't what it will cost to provide the means of communication, but what will it cost to use this means. What is needed in this world is the means of getting what is produced into the hands of the consumer at the least possible cost.—*American Machinist*.

At a meeting of the representatives of the lake lines, trunk lines, Central Traffic and Chicago & St. Paul Associations, held in New York City March 19, lake and rail rates were agreed upon, subject to the approval of the president of the Great Northern, the vice president of the St. Paul & Duluth, and the general manager of the Chicago, St. Paul, Minneapolis & Omaha. The lake lines have formed the Lake Managers' Association, headquarters at Buffalo. Although rates may be fixed, nothing can pre-

vent them from going down to the very lowest notch when navigation opens.

The Milwaukee & Eastern Transit Company has been organized at Milwaukee, Wis., to establish two lake steamer lines running between Milwaukee and Holland, Mich., connecting with the Chicago & West Michigan Railway, and Benton Harbor, connecting with the Cincinnati, Wabash & Michigan Railway and with the Big Four Railway at St. Joseph.

The coffer dam at the head of the new locks being built in the Sault Ste. Marie Canal sprung a leak on the evening of March 18, which soon got beyond control. All the tools and machinery in the pit were submerged, and all work was stopped and was not resumed until three weeks later, when the government engineers succeeded in stopping the leaks and pumped the water out.

The steamer Western Reserve recently took in a cargo of 112,928 bushels of corn at Chicago weighing 3,162 tons. The America has carried 111,507 bushels of corn. The question as to which of the two is the greatest grain carrier of the lakes is yet to be settled since the difference is only 1,421 bushels. The Western Reserve, when laden, draws 14 feet 10 inches aft and 15 feet 2 inches forward.

Representatives of the Missouri roads met at Chicago March 31 to fix a schedule of proportional rates on traffic in connection with lake lines between Western points and the seaboard. The rates decided upon are practically the same as were in effect last year, the Western roads receiving the same percentage from the haul to Chicago that they would if the shipments were all rail to the seaboard.

During the year 1890 1,006 loads of grain amounting to 44,592,559 bushels, were shipped from New York, of which only five loads, amounting to 302,201 bushels were carried in American vessels. Great Britain leads in the New York transatlantic trade, with 625 shiploads, aggregating 30,455,226 bushels, or two-thirds of the entire quantity shipped from that port. Only 22 loads were taken by sailing vessels.

Erie, Pa., on April 8 received its first cargo of corn this spring from Toledo. The schooner C. C. Barnes arrived with 37,000 bushels which is the initial arrival of what will be a million bushels in all before the spring is over. It is said that the Baltimore & Ohio road will continue to ship grain through the Anchor Line, but that the boats will be compelled to deliver it at Fairport Harbor instead of at Erie. Fairport is to have two Anchor Line boats each week. Erie will probably receive a considerable quantity of grain that would otherwise go to Buffalo.

EARLY DAYS OF THE GRAIN TRADE IN MICHIGAN.

The oldest citizen of Detroit connected with the grain trade is Duncan Stewart. This gentleman, when interviewed by a newspaper reporter, spoke as follows about the early lake grain trade:

"The first real impetus was given the grain trade by Joseph L. Hurd and myself, who established the 'North Shore Line.' This was a line of boats in the carrying trade between Detroit and Buffalo. The time made by boats before the inauguration of this line was from thirty-six to forty-two hours to Buffalo. We made a proposition to the New York Central and Michigan Central Railroads to ship on a percentage, for which purpose we would build, so we proposed, two steamers that were guaranteed to make the trip in twenty-three hours and carry 850 tons each. Every one thought we were crazy, for boats heretofore could carry but 350 tons. Our boats were called the Fintry and the Falcon and cost \$50,000 each, an extra ordinary sum of money in those days. We ran the line of boats for over twenty years.

"When war times came on there was a great deal of money made and lost. It was during the rebellion that I shipped the first consignment of Michigan wheat to Liverpool. I kept buying quietly for a whole summer, and in the autumn sent 107,000 bushels to New York. Here I found that to sell at market prices meant a loss of \$33,000. I telegraphed to send it on to Liverpool. Once there the name Michigan wheat was found to be unknown. No one would buy. Finally a baker living outside of Liverpool bought 500 pounds for an experiment. The result was astonishing. Never had he seen such bread. Within a few days the 107,000 bushels were sold at an advance of $2\frac{1}{2}$ to $4\frac{1}{2}$ cents over any other brand in the world. The Times came out with a long article on 'A New Source of Supply,' while other papers were equally enthusiastic. The next summer a dealer came to me and told me to buy for him the whole Michigan crop. I purchased 1,800,000 bushels for him and shipped to Liverpool. The first 160,000 bushels sold at a net profit of \$50,000."

An unknown man attempted to steal grain from a farmer's granary at Garden Plains, near Wichita, Kan., recently, and paid the penalty with his life. Wheat thieves had been raiding the vicinity, and the farmer took measures to dispose of his wheat, so as not to suffer loss. He began to load his wagon, but had hardly commenced before he discovered a pair of feet. He soon dragged the dead body of a man out of the grain. The man's hat was found on the grain, and as a plank had been torn off the top of the bin it is supposed he had fallen head first into the grain and suffocated. The coroner's jury rendered a verdict in accordance with these facts.

PRESS COMMENT.

HAS NOT RELAXED ITS HOSTILITY.

So far as invective is concerned the war against the bucket shops has indeed subsided. It is not a fact, however, that the Board of Trade has relaxed its hostility to these institutions. It is true they obtain quotations in mysterious ways in advance of many of the leading members of the Board of Trade, but that arises from the impossibility of preventing dishonest men from co-operating with them. They are backed by a great deal of money, which they spend freely in obtaining quotations on which their victims gamble.—*Economist, Chicago*.

COUNTRY GRAIN MOVEMENT.

The bad roads in the country are causing heavy losses to country grain dealers who are unable to buy grain to fill contracts. One commission firm here received \$200 to day from a Missouri shipper in settlement for two cars of corn, which the latter could not deliver. A good many letters were received this morning asking that sales be canceled, and proposing settlement on contracts the writers find themselves unable to fill. The movement of grain from farmers has absolutely stopped and receipts cannot fail to be very light for some time to come.—*Kansas City Star, March 26*.

ALL SEIZED BY THE SAME IDEA.

Until the prevailing protectionist craze wears out, British wheat growers must prepare themselves for a fierce competition from abroad. The prohibitory tariffs of France and Germany act like so many dams which send floods of wheat surging against our shore. If ever an adequate social history of the nineteenth century is written, it can hardly fail to record that although in 1890 the wheat growers of almost all lands were bemoaning the exceedingly depressed value of their commodity, those countries which had any facilities for the culture of this cereal were yet all seized by the same idea, how to grow the greatest possible quantity of wheat, and what market to find for it at any price.—*The Miller, London*.

BEGINNING TO SWEAT.

Kansas City's grain handlers are giving the railroads the hardest tussle they have ever had to maintain their ground against an equitable readjustment of grain rates. As a usual thing it is very difficult to cope with the superb legal talent employed by the railroads to deceive the people, but in this emergency the talent and tact of the local grain committee is rather too much for them. They are beginning to sweat under the penetrating rays of light that the lantern of investigation casts upon their methods. Though at first disposed to laugh at its efforts, they now realize that the cause the committee is pleading before the Inter-state Commerce Commission is very likely to result in a verdict that will bring them up to the round turn.—*Implement Journal, Kansas City*.

MORE GOOD THAN HARM.

What some of the friends of the farmers are pleased to call gambling in wheat on the Board is not an unmixed blessing. It has its attendant evils, and occasionally these have been crying ones. But on the whole it has done vastly more good than harm for the agriculturist in opening up foreign markets, furnishing a price record for the governing of transactions at country points, and offering a big accumulation of capital to take care of the surplus at the times when it would otherwise weigh most heavily on the hands of the producer. The man who inveighs against the Board of Trade of this or other cities as one of the worst enemies of the farmer, simply proves by his utterances that he does not understand what he is talking about. If his charges were directed against the bucket shop, which is nothing else than a betting place, and in its palmy days drew most of its "business" from the rural portion of the community, he would be aiming nearer the mark.—*Chicago Tribune*.

STRANGE BUT TRUE.

It is a little strange, but quite true, that cash wheat gets active most years in March and sells above the May future. It did last year, it did two years ago. As there is always wheat at that time in the country elevators, that is held for something of that character, the owners of it sell it to arrive at the premium they can get. After the middle of March, with that wheat coming forward and fresh receipts from a farm movement, usually liberal then in addition, arriving, the receipts here are liberal. That causes a reaction in the price of spot wheat as compared with the price of the May future, for it puts more wheat in the market than is needed at a premium. Elevator companies cannot buy it to sell against for forward delivery. The surplus above the milling demand finds a buyer in the elevator companies at a small discount and that shrinks common values to a shade under May. The same thing is repeated year after year, and the repetition is from the same causes.—*Minneapolis Market Record*.

ELEVATOR

GRAIN NEWS

Red Cloud, Neb., is to have an oil mill.
Lexington, Ky., is to have a broom factory.
Macclenny, Fla., is to have a starch factory.
Germantown, Wis., will have a new brewery.
A new elevator is being built at Buffalo, N. Y.
Gast Bros. have sold their elevator at Prospect, O.
Fred Haller of Altoona, Pa., is building a brewery.
Geo. Walters will build a brewery at Appleton, Wis.
Chas. A. Saake of Seattle, Wash., is erecting a brewery.
Charles L. Burr, grain dealer at Tama, Ia., has sold out.

J. P. Helf will build a brewery at North Kaukauna, Wis.

Walter Bros. of Merasha, Wis., will build a malt house.

A grain elevator will be built at Newfale, Man., by Mr. Rae.

John B. Fischer of Anacortes, Wash., is building a brewery.

Richter & Co. of Spokane, Wash., is putting up a brewery.

Henry Michels of Eau Claire, Wis., is putting up a brewery.

Anton Wagenhaeuser of Dallas, Tex., is building a brewery.

Wyatt & Watkins Bros. have sold their elevator at Prospect, O.

The first starch mill in North Dakota is to be built at Grand Forks.

Haines Bros. & Co., grain dealers at Gresham, Neb., have sold out.

Winand B. os. of Randallstown, Md., have enlarged their distillery.

A new grain elevator is being built at Pottsville, Pa., to cost \$25,000.

The Schellhas Brewing Company is building a brewery at Ogden, Utah.

The Columbia Brewing Company is building a brewery at Detroit, Mich.

Thomas Cox expects to build a cotton seed oil mill at Dardanelle, Ark.

Sylvester Brower will add an elevator to his flour mill at Hanlan, Tenn.

The Texas Brewing Company is building a brewery at Fort Worth, Tex.

Chase Bros., dealers in grain and flour at Portland, Me., have sold out.

The Union Elevator Company at Prospect, O., expects to build an elevator.

The Richmond Brewing Company at Richmond, Va., will build a brewery.

The Consumers' Brewing Company of New York City is building a brewery.

The Paris Oil and Cotton Company has been incorporated at Paris, Tex.

Lewis & Bill, grain dealers at Minneapolis, Minn., have dissolved partnership.

Borke Bros. of Pierson, Ia., have sold their grain business to M. L. Marshall.

The Foell Grain Company of St. Louis, Mo., has been succeeded by Foell & Co.

The Sherman Oil and Cotton Company has been incorporated at Sherman, Tex.

The Buffalo Weiss Beer Brewing Company is building a brewery at Buffalo, N. Y.

C. G. Austin of Seattle intends to build a large grain elevator at Anacortes, Wash.

A stock company has been organized at Jackson, Ga., to build a cotton seed oil mill.

The Standard Brewery has been incorporated at Chicago, Ill., with \$300,000 capital.

Vorhes Bros., have sold out their grain business at Pierson, Ia., to M. L. Marshall.

The Shendun Brush and Broom Company is building a broom factory at Shendun, Va.

Connolly & Hunter, hay and feed dealers at New York City, have dissolved partnership.

The committee appointed by the Minnesota Legislature to investigate the reported steal of 60,000 bushels of wheat

from the Duluth elevators, has subpoenaed witnesses to appear before it at St. Paul.

G. B. Lawton's Sons, hay and feed dealers at New York City, have dissolved partnership.

A stock company is being organized to build a cotton-seed oil mill at Waxahatchie, Tex.

A broom factory will be built at Luray, Va., by the Piedmont Manufacturing Company.

J. A. Leduc & Co., dealers in hay and grain at Montreal, Quebec, have dissolved partnership.

The San Antonio Oil Works have been incorporated at San Antonio, Tex. Capital \$50,000.

It is said that Bennet's elevator at Buffalo, N. Y., will be sold to the Lackawanna Railroad.

Peoria, Ill., is now doing an excellent business and is shipping out large quantities of grain.

The Farmers' Alliance at Lawrenceville, Ga., will build a cotton-seed oil mill and guano factory.

The Board of Trade of Greenville, Tex., is negotiating for the erection of a cotton seed oil mill.

Send us all news of your district which will be of interest to elevator men and grain dealers.

Chapin & Co., dealers in grain and flour at Great Barrington, Ill., have dissolved partnership.

Joseph Remington has confessed that he murdered J. T. Fleit, elevator agent at Arthur, N. D.

The Joseph H. Ladovec Brewing Company is building a brewery at Chicago, Ill., to cost \$40,000.

A distillery consuming 300 to 500 bushels of corn a day will probably be built at Dyersville, Ill.

The Riverside Brewing Company has been incorporated at Zanesville, O., with \$30,000 capital stock.

G. W. Simpkins & Son, grain dealers and grocers at Reynolds, Neb., have dissolved partnership.

The Scottdale Brewing Company has been incorporated at Scottdale, Pa., with \$10,000 capital stock.

The elevator in connection with the "Fort Worth Flour Mills" at Fort Worth, Tex., will be enlarged.

Troutner & Edmunds, grain and coal dealers at Chickasaw Station, Ia., have dissolved partnership.

An elevator costing \$25,000 will be built at Millington, Ill., by the Millington White Sand Company.

The Dukehart Brewing Company has been incorporated at Baltimore, Md., with \$75,000 capital stock.

The proposed "armers' elevator at Arden, Man., will not be built, as not enough stock could be sold.

Corell Bros. & Co., dealers in grain, coal and live stock at Creighton, Neb., have dissolved partnership.

The Spartanburg Canning and Manufacturing Company will build a broom factory at Spartanburg, S. C.

S. Pearce, grain buyer at Fleming, Assin., bought about 100,000 bushels of wheat during the past winter.

The Ontario Brewing Company has been incorporated at Philadelphia, Pa., with \$200,000 capital stock.

A 50,000 bushel grain elevator will be built at Hillsboro, Tex., by the Hillsboro Roller Mill Company.

The Broomhall Milling and Malting Company has been incorporated at Mohawk, N. Y., with \$15,000 capital.

A distillery costing \$250,000 is to be built at Hastings, Neb. It will consume 4,000 bushels of corn per day.

The Farmers' Oil Mill Company has been incorporated at Vicksburg, Miss., by W. J. Katzenmeir and others.

H. A. Greenwood, dealer in grain, lumber and groceries at Wymore, Neb., has sold out his grocery business.

Field, Lindley & Co., commission dealers in grain and provisions at Chicago, Ill., have dissolved partnership.

The Northern Michigan Brewing Company has been incorporated at Iron Mountain, Mich., with \$25,000 capital.

The Northern Central Railroad Company will put an electric light plant in its No. 2 elevator in Baltimore, Md.

The United States Brewing Company at Chicago, Ill., has increased its capital stock from \$2,500,000 to \$5,000,000.

Abilene, Tex., is agitating the question of erecting a 200,000 bushel grain elevator in time to handle the next crop.

D. Ellis & Sons of Indiana, Pa., have completed a new grain elevator in connection with their "Penn Flour Mill."

The Union Elevator Company of Prospect, O., expects to build a flouring mill this season in connection with its elevator.

A very interesting sight can be seen at the California warehouse at Port Costa. On the top floor, which is 800 feet long, there are 75,000 sacks of wheat dumped up five high.

The Farmers' Institute at Rapid City, Man., has decided to erect a 60,000-bushel grain elevator and has organized a stock company for that purpose. Reeve McGregor, Jas. Burland and others, are investigating and

looking for information as to the cost of building and running an elevator.

Johnson Bros. & Co., dealers in grain and lumber, and bankers at Lynnville, Ia., have been succeeded by H. D. Lane & Co.

J. L. Bi tick of Modesto, Cal., has planted forty acres with cotton seed. He intends to give the experiment a thorough trial.

John H. Downing & Co., dealers in grain and stock at Granville, Ia., have sold their grain business to Cannon Bros. Paulina.

George W. Van Sickle of Martinsville, Ind., has sold his elevator and mill at that place to Ira McDaniel of Brooklyn, Ind.

Field, Lindley & Co., grain commission dealers at New York City, have been succeeded by Field, Lindley, Wiechers & Co.

G. Ferguson, dealer in grain and agricultural implements at Dunbar, Neb., has sold out his agricultural implement business.

A cotton seed oil mill will be built at Woodstock, Ga., by the Alliance Mercantile Manufacturing Company, lately incorporated.

Morrel & Lubeck, feed dealers at New York City, failed recently with liabilities of \$10,402; assets \$15,285; actual assets \$4,715.

Chester W. Yerex, the hull-less oats swindler who fled to Germany, was placed on trial at Belleville, Ont., March 10, for forgery.

A 500,000-bushel grain elevator will be built at Buffalo, N. Y., on the site of the "Wells Elevator," which was burned a few months ago.

Andrew Marshall of Shoal Lake, Man., enjoys a monopoly of the grain business there, as he is the only one doing business at that point.

Duluth, Minn., has elevators with a capacity of 12,500,000 bushels, and West Superior, Wis., 8,500,000 bushels, a total of 21,000,000 bushels.

J. Davidson & Son, dealers in grain and cattle at Gresham, Neb., have been succeeded in the grain business by Davidson, Byers & Co.

A grain elevator of large capacity may be built at Philadelphia, Pa., by the Baltimore & Ohio Railroad Company, at a cost of about \$500,000.

John H. Downing & Co., who sold their grain business at Granville, Ia., have bought out Geo. E. Ward of Hawarden, Ia., and Alcester, S. D.

F. A. Smith, lately connected with Geo. C. Harper, grain dealer at St. Paul, Minn., has gone into the grain business for himself at Minneapolis.

Gasche Thomsen, dealer in grain, lumber, hardware, agricultural implements and live stock at Crowell, Neb., has sold his grain and lumber business.

Seeley, Son & Co., elevator builders at Fremont, Neb., recently closed a contract to build a 250,000-bushel elevator for H. R. Heath at Fort Dodge, Ia.

Routhwaite, Man., has only one elevator, yet it shipped 143,250 bushels of wheat and a large quantity of oats over the Northern Pacific & Manitoba Railway.

A company has been organized at Emmetsburg, Ia., to build a linseed oil mill. It will use flax grown in the surrounding country to make oil, tow and pulp.

Work has been commenced on E. N. Offutt & Co.'s elevator at Georgetown, Ky. It will be 80 feet high with a capacity of 75,000 bushels, and is to cost \$11,000.

Seeley, Son & Co., elevator builders of Fremont, Neb., have a contract to build a 100,000-bushel elevator at Nebraska City, Neb. for Messrs F. Beyschlag & Co.

More than 500,000 bushels of wheat have been marketed at Neepawa, Man., the past season. Neepawa is the place where the farmers intend to build a 75,000-bushel elevator.

J. A. Crenshaw of Charleston, Mo., has closed a contract with James Stewart & Co. of St. Louis, elevator builders, for a 100,000-bushel elevator in connection with his flour mill.

A 50,000-bushel grain elevator will be built at Waseca, Minn., by Everett, Augenbaugh & Co., in connection with a new flour mill being erected, to take the place of one burned recently.

The Fowler Elevator Company at Omaha, Neb., will increase the capacity of its elevator from 200,000 to 800,000 bushels. The erection of a new house is also contemplated in that city.

The Wells Elevator at Buffalo, N. Y., which was burned some time ago, will be rebuilt immediately with a capacity of 500,000 bushels. The house will be 97x141 feet, with bins 65 feet deep.

The St. Anthony elevator at Minneapolis, Minn., will have six of the largest size machines made by Huntley, Cranson & Hammond of Silver Creek, N. Y. B. F. Ryer, their Western agent, made the sale.

The Centralia Pulp and Water Power Company of Centralia, Wis.; Gabriel Streich of Oshkosh, Wis.; Chas. H. Mueller, Port Washington, Wash.; Garfield Injector Company, Wadsworth, O.; the Atlas Paper Company,

and the Fox River Paper Company of Appleton, Wis., have placed their orders with the Menasha Wood Split Pulley Company of Menasha, Wis., for hickory pulleys.

The Inter-State Grain Company at Minneapolis, Minn., have adopted and will furnish their large elevator with the quadruple separators made by the A. P. Dickey Manufacturing Company at Racine, Wis.

James M. Hillery, grain and feed dealer of New York City, who failed recently, as reported in our last issue, according to later advices has liabilities of \$55,903; nominal assets \$149,500; actual assets \$36,763.

The Winnipeg Grain Exchange desires that the government of Manitoba adopt measures to induce farmers to raise white oats instead of the black variety which is low priced and not in favor with Eastern dealers.

The Fred C. Barnett Grain Company has been incorporated at Litchfield, Ill., to deal in grain, hay, feed and merchandise. Capital stock \$5,000; incorporators, Fred C. Barnett, C. B. Munday and J. Munday.

Helsten & Leach, dealers in grain and coal at New Milford, Conn., have dissolved partnership. W. H. Helsten retires from the partnership and Mr. M. G. Leach will conduct the business of this firm in the future.

Fred B. Godfrey has advertised for bids for the grain, hay, feed and other stock damaged in the fire which recently destroyed the Diamond Elevator and Warehouse owned by the Minneapolis Grain and Feed Company at Minneapolis, Minn.

The Minneapolis Grain and Feed Company, whose Diamond Elevator burned April 8, will rebuild elevator and mill at once on the old site. The new building will be larger, with the latest improved machinery and better facilities for handling grain.

The million-bushel elevator built by Barnett & Record, elevator builders of Minneapolis, Minn., at Fairport, O., for a railroad company, has just been completed. The same railroad company will possibly build another house of larger capacity at that place.

The members of the Montreal Exchange protest against the increase made by the Grand Trunk and Canadian Pacific Railway in charges for ten days' storage. It was understood that the charge was to remain at $\frac{1}{2}$ cent per bushel instead of $\frac{3}{4}$ cent, as the new rule has it.

Miller F. Hageman, grain dealer, postmaster and grocer of Cass county, Ill., who left for parts unknown last September, surrendered to the sheriff at Visalia, Cal., April 2. He will be tried for the larceny of grain from farmers in Cass county. His shortage is \$10,000.

The Farmers' Warehouse Association has been incorporated at Kent, Minn., with \$10,000 capital stock. The incorporators are A. E. Smith, J. B. Welling, J. R. Harris, J. B. Rademacher, E. H. Marick, Peter Kautz, J. E. Alexander, Theo. Lockman, Jr., and George Lenoue.

George W. Van Dusen, the elevator man of Minneapolis, and Chas. H. Chadbourne, who had been charged with improper practices in conducting the affairs of a Western mine, the Silver Bell, were given a favorable verdict in a suit by Mrs. S. E. Newton, in which she sued for a part of the profits. The court not only acquits them of the charge of improper practices, but also decides that Mrs. Newton must pay \$33,193 to recover 1,380 shares of stock.

The Inter state Grain Company has an elevator in the second ward of Minneapolis on land belonging to the Great Northern Railway Company. This building was assessed twice for taxes, as real estate and as personal property. The company will fight the latter a assessment which was made on the principle that buildings on non-taxable ground were for purposes of taxation personal property. Later the Minnesota Legislature has passed a law making grain elevators taxable property. This will support the elevator company.

The Alliance Elevator Company at Minneapolis, Minn., which recently assigned to G. H. White, is in bad shape, the liabilities being \$16,657 and the assets only \$8,750. Woodward & Co., who hold mortgages on the five elevators owned by the company, will foreclose and then the assignee will assess the stockholders enough to make up the deficiency in the assets. Assignee White claims that the sharp practice of some of the stockholders in having their stock canceled at a directors' meeting was illegal. Before the company's affairs are settled the grangers will wish that they had not gone into the elevator and grain business. Thus ends another attempt of the farmers to run elevators.

The Alliance Elevator Company which failed at Minneapolis recently, was organized in 1888, and has done an almost exclusive business with the farmers. It has only four or five houses, and those unimportant. C. C. Wolcott was the first president and manager. He went to Europe to float the \$2,000,000 bonds and left the business in the hands of employees. He never sold the bonds, only about \$15,000 of the \$200,000 of stock subscribed at home was ever paid in, and the company has had to run on borrowed capital. H. L. Loucks, the South Dakota politician, took hold of the company's affairs as president. Later Courtland Skinner, the son-in-law of one of the directors, came in as secretary. Loucks has been engaged in looking after his fences a part of the time, and was sick at other times, and has really had not much to do with the management of the company's affairs. Skinner was inexperienced, and in consequence the business was not at all satisfactory. Still, many of the old debts were paid up from time to time. The company had no member-

ship in the Chamber of Commerce, and did its business through Woodward & Co. Things began gradually to get worse and worse, and the assignment came as a very natural result.

J. S. Lapham & Co., grain dealers at Detroit, Mich., filed a bill in the Wayne Circuit Court March 16, stating that on Nov. 9, 1889 they drew on L. A. Norris, of Crary's Mills, N. Y., for \$310 for goods delivered, through the Preston National Bank. The bank was to deliver the draft to a bank at Canton, N. Y., for payment, and if dishonored was to return it promptly. The draft was not paid and the bank failed to return it within a reasonable time. Not knowing that the note had been dishonored J. S. Lapham & Co. shipped to L. A. Norris, on credit, wheat valued at \$260. Before the sixty days' credit had expired Norris became insolvent. They allege that the Preston National Bank is liable for the \$260 because it neglected to return the draft promptly.

Jas. Lytle of Jefferson, Wis., who buys grain at a number of points in Jefferson, Dodge and Fond du Lac counties in Wisconsin, and whose cleaning elevator and office are located at Jefferson Junction, Wis., has converted his business into a stock company to be known as The Lytle-Stoppenbach Company, Mr. Lytle and the Messrs. Stoppenbach of Jefferson owning all the stock. The following officers have been elected: Frank Stoppenbach, president; Emil Stoppenbach, vice president; Jas. Lytle, secretary and treasurer. The latter will also have the management of the business. They have already commenced the construction of a malt house at Jefferson Junction, which will have an annual capacity of 200,000 bushels and will put in the Galland Henning Pneumatic Drum Malting System, having contracted for the same with the manufacturers in Milwaukee. The new company has bought the elevator property at London, Wis., of F. Kraus & Co. of Milwaukee, and will buy grain at that point and also at Deerfield and Cottage Grove, Wis., in addition to the points now operated by Mr. Lytle. These three stations will furnish as much barley as they will have capacity for malting, and they will therefore continue to be the largest interior shippers of barley in Wisconsin.

Fires, Casualties, Etc.

A grain store at Lowell, Mass., burned March 21. Loss \$10,000.

A brewery at Mt. Sterling, Ill., burned March 16. Loss \$20,000.

A grain elevator at Greenwood, Ind., was burned at 9 o'clock on the night of March 18.

Klinkert's brewery at Racine, Wis., was damaged by fire March 10. Loss \$20,000; insured.

The Pacific Coast Elevator at Moscow, Idaho, was recently destroyed by fire. Loss \$25,000.

The mill of the Maize Oil and Seed Company at Cincinnati, O., has been burned. Loss \$40,000.

Frank Herrman's brewery at Sterling, Ill., was burned March 16. Loss \$20,000; insurance \$13,000.

Lilly, Bogardus & Co., grain and feed dealers at Seattle, Wash., have sustained loss by fire.

The Knickerbocker Brewing Company at New York City, suffered a loss of \$50,000 March 17 by fire. Insured.

A part of the roof of Ferrin Bros.' grain elevator at Mount Morris, N. Y., was blown off by a high wind recently.

The Christian Weyand Brewing Company of Buffalo, N. Y., suffered a loss of \$150,000 by fire March 14. Fully insured.

The Brandon & Kirmeyer Brewery at Leavenworth, Kan., was destroyed by fire March 4. Loss \$12,000; not insured.

W. C. Henry's grain elevator at Burchard, Neb., containing 1,600 bushels of grain, was burned early on the morning of March 25. Loss \$6,000; insurance \$4,000.

The eleven year old son of George Quackenbush, near Farwell, Mich., on March 23, was thrown into the gearing of a sweep horse power, but he fortunately had an ear of corn in his pocket, which came between the cogs and stopped the machine after he had had his hip badly mangled.

The grain elevator at Belle Plaine, Ia., owned by William Murray, was burned at 6 o'clock on the morning of March 24, together with 8,000 bushels of grain, of which 5,000 bushels were wheat. The loss on elevator and contents is \$10,000; insurance \$5,000. The Chicago & Northwestern Railway freight depot was also damaged by the same fire. Loss \$500.

The Diamond Elevator at Minneapolis, Minn., owned by the Minneapolis Grain and Feed Company, was destroyed by fire at noon April 8, together with a large quantity of hay, corn, oats, buckwheat and three cars of flour. The origin of the fire was in the engine room. F. B. Godfrey and J. C. Woodworth owned the building, as they compose the company. The loss is \$35,000; fully insured.

LATE PATENTS

Issued on March 17, 1891.

AUTOMATIC GRAIN METER.—Walter A. Johnson, Byron, Minn. (No model.) No. 449,218. Serial No. 348,745. Filed April 18, 1890.

GRAIN SCALE.—Alexander W. Butts, Celina, Tex. (No model.) No. 448,316. Serial No. 357,246. Filed June 30, 1890.

SEPARATOR.—Jacob H. Bisauer, Lincolnton, N. C. (No model.) No. 448,198. Serial No. 372,677. Filed Nov. 26, 1890.

SEPARATOR.—Fairfax H. Wheelan, Santa Barbara, Cal. (No model.) No. 448,394. Serial No. 345,752. Filed March 28, 1890.

Issued on March 24, 1891.

BAG-HOLDING APPARATUS.—Justus A. Traut and Charles E. Riecker, New Britain, Conn., said Riecker assignor to said Traut. (No model.) No. 448,791. Serial No. 366,526. Filed Sept. 29, 1890.

GRAIN DOOR FOR CARS.—Richard W. Thieckins, Minneapolis, assignor of one-third to Edward R. Harroun, St. Paul, Minn. (No model.) No. 449,093. Serial No. 284,610. Filed Sept. 5, 1888.

CORN SHELLER.—Otis E. Davidson, Nashville, Tenn., assignor to Mattie Vermont Davidson, same place. (No model.) No. 448,941. Serial No. 356,569. Filed June 24, 1890.

COTTON OR HAY ELEVATOR.—Jesse J. Draffin and William P. Nelson, Idaville, Tenn. (No model.) No. 448,641. Serial No. 374,036. Filed Dec. 9, 1890.

ELEVATOR.—Thomas J. Underwood, Decatur, Ill. (No model.) No. 448,699. Serial No. 346,965. Filed Sept. 15, 1890.

FANNING-MILL.—Joshua S. Shafer, West Plains, Mo., assignor to Joe R. Davidson and Robert G. Green, both of same place. (No model.) No. 448,809. Serial No. 363,043. Filed Sept. 3, 1890.

GRAIN SCALE.—George C. Flagg, Lewiston, Ill. (No model.) No. 448,761. Serial No. 363,587. Filed Oct. 18, 1890.

Issued on March 31, 1891.

BALING PRESS.—Andrew Wickey, Chicago, Ill. (No model.) No. 449,189. Serial No. 366,973. Filed Oct. 3, 1890.

CAR PUSHER.—John M. Jones, Atlanta, Ga., assignor to Geo. W. Henderson, same place. (No model.) No. 449,632. Serial No. 361,370. Filed Aug. 7, 1890.

COAL OR GRAIN ELEVATOR.—Milton T. Rose, Orland, Ind. (No model.) No. 449,495. Serial No. 368,133. Filed Oct. 14, 1890.

CORN SHELLER.—William F. Steinbaugh, Platte Centre, Neb., assignor of one-third to Henry Reuting, same place. (No model.) No. 449,637. Serial No. 364,694. Filed Sept. 11, 1890.

FEED MILL.—Jonas D. Henry and William E. Wood, Portland, Ore. (No model.) No. 449,445. Serial No. 338,319. Filed Jan. 27, 1890.

GRAIN CLEANER.—Scott Stewart, Rivesville, W. Va. (No model.) No. 449,599. Serial No. 336,574. Filed Jan. 10, 1890.

PORTABLE ELEVATOR AND WAGON-UNLOADER.—Robert S. Kirkpatrick, Harlan, Ia., assignor of one-fourth to R. P. Dammand, same place. (No model.) No. 449,447. Serial No. 351,519. Filed May 12, 1890.

UNLOADING APPARATUS.—Robert S. Kirkpatrick, Harlan, Ia., assignor of one-fourth to R. P. Dammand, same place. (No model.) No. 449,443. Serial No. 369,990. Filed Oct. 31, 1890.

AUTOMATIC WEIGHING MACHINE.—Henry E. Smyser, Philadelphia, Pa. (No model.) No. 449,276. Serial No. 361,073. Filed Aug. 5, 1890.

GRAIN-WEIGHING MACHINE.—Samuel E. Brown, Kane, Ill. (No model.) No. 449,402. Serial No. 373,717. Filed Dec. 5, 1890.

Issued on April 7, 1891.

FAN BLOWER.—Frank F. Landis, Waynesborough, Pa. (No model.) No. 449,743. Serial No. 370,798. Filed Nov. 8, 1890.

DRIVING CHAIN.—Charles H. Brampton, Birmingham, England. (No model.) No. 449,997. Serial No. 371,777. Filed Nov. 18, 1890. Patented in England Feb. 26, 1890. No. 3,060.

CORN CONVEYOR.—William Riedel, Baker, Kan. (No model.) No. 449,703. Serial No. 353,230. Filed June 12, 1890.

PEA-HULLER.—Henry B. Babbitt, Paxton, Ind. (No model.) No. 450,051. Serial No. 354,895. Filed June 10, 1890.

WAGON DUMP AND ELEVATOR.—John S. Kidd, Des Moines, Ia. (No model.) No. 449,680. Serial No. 361,639. Filed Aug. 31, 1888. Renewed Aug. 20, 1889. Again renewed Aug. 11, 1890.

Latest Decisions.

Limiting Liability of Carriers.

In a bill of lading for a bull, a provision limiting the liability of the carrier to \$30 is not valid, and the shipper may recover according to the measure of damages fixed by law.—*St. Louis, A. & T. Railway Company v. Robbins, Court of Appeals of Texas.*

Note Given in Renewal of Note Invalid for Fraud.

Where a note is invalid for fraud, a note which is given in renewal of it, to one who has full knowledge of the fraud, is equally invalid, though the renewal note could be enforced in the hands of an innocent purchaser for value.—*Hunt v. Ramsay, Supreme Court of Michigan.*

Payment of Note by Bank.

Where a note which is made payable at a bank is paid at its maturity by the bank, the bank then becomes the equitable owner or purchaser of the note, and is entitled to set it off in a suit by the maker of the note to recover a balance due him on an account as a depositor.—*Bedford Bank v. Acoan, Supreme Court of Indiana.*

Responsibility of Carriers of Goods.

Where a railroad company receives freight to be forwarded to a point not on its line, the fact that it requires from the shipper a guaranty of payment of through freight is not conclusive that it undertakes the responsibility of delivering goods at the point of destination.—*Illinois Central Railway Company v. Kerr, Supreme Court of Mississippi.*

Agreement of Landlord to Repair.

In the case of Clinigban v. McFarland the New York Court of Common Pleas held that while all oral agreements made prior to the execution of a written contract are merged in the writing when it is executed, yet the agreement of a landlord to place the leased premises in good repair, made in such a manner as to form a substantial part to the consideration, may be proved and recovered upon, although not included in the written lease. If made after the tenant had agreed to take the premises, it would then be void unless included in the lease.

Termination of Contract of Employment

In the case of Hannay v. Zerban the New York Court of Common Pleas held that where a contract of employment is made which it is agreed shall be for one year, if continued without cause of complaint, and was further agreed that it should not be terminated except upon notice of one month, the agreement that it might be terminated upon such notice must be taken in connection with the agreement regarding just cause for complaint, and without such cause the employment could not be terminated upon notice of one month, or any other notice.

Delay of Freight by Violence of Strikers.

When a delay is caused mainly by the refusal of the employees of the carrier to perform their duty as such, the carrier is liable for the delay; but where such employees suddenly refuse to work and are discharged or abandon their employment, and their places are promptly supplied by other competent men, who are prevented from doing their duty by strikers by the use of lawless and irresistible violence, the carrier is not responsible for the delay caused solely by such violence, if he has used reasonable efforts and diligence to suppress such interference.—*Missouri Pacific Railway Company v. Levy, Court of Appeals of Texas.*

Acceptance of Draft for Consignment.

Where a consignee of goods knows that the consignor has drawn upon him for the price of the goods, his receipt of them amounts to an implied acceptance of the draft as well. A bona fide creditor of a consignor, who holds the latter's draft, for value, to which bills of lading transferred in blank are attached to secure its payment, is to be deemed the owner of the goods, so far as to give validity to the pledge created by the forwarder, and, on presentation of the draft, with the annexed bills to the consignee, before he has accepted the consignment, is unquestionably entitled to the payment of his draft by the consignee.—*First National Bank of Starkville v. Meyer, Supreme Court of Louisiana.*

Carrier—Illegal Contract—Rebate.

The Supreme Court of Indiana held, in the case of the Cleveland, Columbus, Cincinnati & Indianapolis Railway Company v. Closser, that a contract of shipment was not rendered illegal by the single fact that the carrier gave the shipper a special rate, to be carried into effect by means of a rebate; that in order to defeat the shipper's action for the rebate the carrier must show that the special rate was an unjust, unfair or oppressive discrimination in favor of the shipper against the general public; and that a pooling arrangement entered into between rival railroad companies fixing freight rates was prima facie illegal, and that one of the companies which agreed to give a shipper a rebate in violation of the pooling contract must affirmatively show that the pool was formed to

prevent ruinous competition, and not to establish unreasonable rates, unjust discrimination or oppressive regulations, before it could rely on the shipper's knowledge of the pool rates as a defense to an action for the rebate.

Delay in Delivery of Telegram—Damages.

The Rich Gain Distillery Company sent a message to boiler-makers in a neighboring city notifying them that a boiler was out of repair and asking them to "send man at once." By reason of the failure of the telegraph company to transmit or deliver the message the distilling company was compelled to suspend operations for twenty-four hours longer than it would have done had the message been transmitted and delivered in the regular course of business. The Superior Court of Kentucky held in an action against the telegraph company that the sender of the message was entitled to recover for the additional expense incurred in feeding cattle, and the additional amount paid to hands, by reason of the delay caused by defendant's failure to transmit the message. The court said that as it was the business of the firm to which the message was sent to send men to repair boilers it must be presumed that they would have followed their usual course of business and it was not reasonable to presume that had he man been sent he could not have done the work.—*Rich Grain Distillery Company v. Western Union Telegraph Company.*

ANALYZING FLAXSEED FOR COMMERCIAL PURPOSES.

As only pure flaxseed is known to trade, says Inspector Stevens of Chicago, therefore there must be a system of inspection analysis. To provide for this necessity, the Board of Trade of the city of Chicago enacted rules of action and control, and under them appointed an agent to execute, and a committee to supervise and direct. The agent, known as an inspector, set up an office and also an operating room adjoining, with various unique appliances for carrying into effect the declared purpose of the Board. The most conspicuous articles are marble-top tables, sets regulation wire sieves (the one three by sixteen, the other sixteen by sixteen mesh) various testing scales, numerous nondescript tin dishes and shelves for thousands of analyzed samples.

The object of analysis is to learn the per cent. of impurity intermixed, in certain cars or lots of flaxseed, and ascertain the weight per measured bushel of the same. The mode of action in the analysis of flaxseed is divided into two parts: The first is the gradual reduction of the impurity intermixed in sample to the minimum. The second, the gradual reduction of the flaxseed (which policy suggested in executing part first should remain with the impurity) to the infinitesimal. The impurity of flaxseed consists of all seeds and substances intermixed; but no seeds of flax becomes impurity by reason of deterioration.

When a sample of flaxseed is presented for analysis (sometimes called test), a pound is weighed and poured into the sieves as they rest, the one within the other, on a thick sheet of paper in place on the center of table. The movement then begins by placing the thumb and fingers of one hand on the top of both sieves, and sliding the sieves gently back and forth on the paper. When the passage of flaxseed is nearly completed, the top sieve is raised, and the contents placed on the paper with the impurity which has passed the lower sieve. This is repeated (never less than three times) until the amount of impurity remaining in flaxseed is reduced to the minimum.

Should there be developed shives or chaff on top of seed in lower sieve, the top sieve is laid aside and the sliding movement is continued with increased rapidity until the light stuff is well on the surface, then the sieve is raised in the hands (for the first time) and shaken so as to gather the impurity; then it is removed by the thumb and fingers to an empty dish, and the now commercially pure flaxseed poured into a dish at the left of the scales. The sixteen by sixteen sieve is placed on the paper, and the shives and chaff with flaxseed intermixed is placed therein, and the sieve rapped on the table until the flaxseed is as clear as practical, when it is placed with pure seed on the left. Here closes the first part.

Part second opens with the impurity of the weighed pound of seed lying on the table intermixed with flaxseed. It is placed in the two sieves, and the sieves rapped on the table until no further separation can be effected. The impurity is placed in scale scoop, and contents of lower sieve to empty dish on the right. At this stage the mustard and other round seeds are removed.

The contents of the dish on the right are turned out on the paper, and the dish placed on opposite side of table. The paper is raised to desired concavity, and the mustard and other round seed, with the assistance of the fingers of the right hand used as an agitator, are rolled into the dish. The remainder of the flaxseed is secured by being passed, by the sliding motion, through the upper to the lower sieve. But no complete separation is attempted at any single passage. The movement is continued and success attends. Each time there is left in the meshes of the upper sieve a portion of the impurity and a small quantity of flaxseed. When the seed becomes pure in the sixteen by sixteen sieve, it is placed in the dish with pure seed on the left of scale, and the process repeated with the remaining seed and impurity, until all seed is taken out.

The exception is where the quantity of flaxseed and impurity has become small, it can be placed in lower sieve,

and the sieve raised and turned to an angle, and gently shaken. The seed, owing to its smooth surface, slides to the lower side, while the impurity, having rough and irregular surfaces, remains on the incline.

A folded cloth is placed over the flaxseed, and the impurity thrown out on the paper. No full separation is expected, but this movement is continued until the seed is clear. The pure seed and impurity having been secured in separate dishes, as a finale, the impurity is returned to the sieves, and the sieves rapped sharply on the table and contents of lower sieve examined for flaxseed. If none is found, the analysis is complete. The impurity is weighed to ascertain the per cent. and the pure flaxseed is weighed to find the weight per measured bushel.

There are exceptional samples of flaxseed which require other movements than those described above. To separate the small and broken flaxseed from the impurity with which it passed the lower sieve, the mixture in small quantities is placed in the sixteen by sixteen sieve, which is then raised and turned to an angle of about forty-five degrees and gently shaken. The seed somewhat intermixed with impurity slides down to the lowest point, where it is covered with a folded cloth, and the impurity remaining on the incline is thrown out on the paper. The cloth is removed, and the movement repeated. Flaxseed that is broken so small as not to respond to the above described action, but remains on the inclined sieve, is impurity.

To analyze a sample of flaxseed intermixed with false flax: The pound sample is placed in the sieves and given a gentle sliding movement, so as to retain in the meshes as much false flax and as little real flax as possible. This is repeated until the false flax in the sample is reduced to the minimum. Then the flaxseed is taken out of the false flax by using only the sixteen by sixteen sieve, the same way that small and broken flaxseed is removed from impurity described above. Water grass seed is removed from flaxseed by passing the sample through the sieves, the same as described, for false flax. But even when reduced to the lowest, there still remains on the top a large quantity of immature grass seed. The sample is placed in the sixteen by sixteen sieve, and by the same movement, as in case of shives and chaff, the grass seed is taken off intermixed with flaxseed. It is then placed in top sieve and the flaxseed, by the gentlest movement possible, is passed through while the grass seed is caught in the meshes. The flaxseed becomes reasonably clear after many passages.

In case large flaxseed is intermixed, which will not pass through the three by sixteen meshes, after the quantity is reduced to the minimum, place it in the sixteen by sixteen sieve, and slide the seed out as in the occurrence of small or broken seed.

Hulled wild buckwheat is taken out of flaxseed by being detained in the meshes of the top sieve. There is no movement yet discovered whereby smartweed seed can be successfully separated from flaxseed. To obtain a correct analysis, the sample must be worked to a finish. The average time required to analyze average samples of flaxseed is about fifteen minutes, while twenty, thirty or sixty minutes are sometimes demanded. In the analyzing department are tables enough to accommodate four experts and four assistants. An expert will average four samples per hour, with an assistant he will average eight samples per hour.

Weight to the measured bushel is an important factor in determining the commercial value of flaxseed. This is ascertained by pouring the seed slowly and regularly into the cup of the scales invented for that purpose. When filled, it is struck and weighed. Then the impurity is returned to the seed and the pound is inclosed in a paper bag, which, after the result of inspection and analysis is recorded and certificate issued, is deposited, to remain intact sixty days and will be retested if desired.

WEIGHT OF EAR CORN.

Prof G. E. Morrow of the University of Illinois, experiment station, has published a bulletin in which he says: "Several inquiries have been received as to the number of pounds of ear corn required to make a bushel, fifty-six pounds, of shelled corn at different seasons of the year, the implication or direct statement being that the common practice of requiring seventy pounds is, this season, more to the interest of the buyer than of the seller. The percentage of water in corn in Central Illinois when husked in the autumn of 1890 was considerably less than in the years immediately preceding. We have found 70 pounds for the early, 73 for the medium, and 78 for the late maturing varieties tested at this station was sufficient to produce a bushel of air-dry corn at the last of October. When thoroughly air dry 12 pounds of cob per bushel, or 68 pounds of good ear corn for 56 pounds of good shelled corn would seem a maximum for any varieties suitable to be grown in this latitude. When the ears have been carefully selected, as in selecting corn for seed, less than this should be sufficient. When delivered to the buyer in the ear, there are often many partly shelled ears, inferior ears, dirt, etc. No fixed rule can be given for determining the proper weight of ear corn for a bushel of shelled corn soon after husking. The percentage of moisture in both cob and kernel varies greatly in different seasons and different varieties."

A bill has been introduced in the Illinois Legislature providing for the licensing of all engineers having charge of steam engines of any kind. This, of course, would include engineers having charge of power plants in steam elevators.

THE EXCHANGES

Tickets of membership to the New York Produce Exchange are selling at \$710 to \$715.

The plan for building a system of telegraph lines between the different commercial exchanges in this country is about completed. The idea originated with the Chicago Board of Trade.

The Louisville Board of Trade has indorsed the memorial to Congress made by the National Transportation Association for a uniform bill of lading and uniform classification of freights.

Omaha grain dealers expect to establish a large grain market and will open an exchange some time this summer. The directors of the Omaha Board of Trade will hold a meeting to consider the subject. The expectation is that a large part of the business done at St. Louis and Chicago can be transferred to Omaha.

The Philadelphia Commercial Exchange by a conference of its committee on information and statistics with the representatives of the railroads having terminals in that city, have made arrangements by which the railroads will furnish complete reports of all grain, flour, etc., received, as is the case at Chicago and New York. The new arrangement went into effect April 1.

The grain inspection system of the Milwaukee Chamber of Commerce is managed by a chief inspector who hires his assistants and pays their salaries; the fees charged make up his compensation. It was proposed to pay him a certain salary and to take the control of the deputies from him, the chamber to collect the fees. The directors, however, when the matter was brought to their attention, after a full consideration of the new plan, decided that the old system is entirely satisfactory and that a change is not to be desired.

The Milwaukee Chamber of Commerce held its annual election of officers on Monday, April 6, which resulted as follows: President, E. P. Bacon; first vice-president, F. H. Magdeburg; second vice-president, Alexander Berger; secretary, W. J. Langson. Directors, F. G. Bigelow, Robert Krull, Robert Eliot. Board of arbitration, C. M. Payne, John Foley, Jr., C. M. Cottrill, A. C. Zinn, A. G. Bodden. Board of appeals, C. F. Isley, E. Hotchkiss, L. R. Hurd, Oscar Mohr, C. E. Lewis. Grain inspector, F. D. Hinkley. Weigher, F. F. Clapp.

The "boys" on the Chicago Board of Trade are fond of jokes. Not long since the attention of one of the directors, M. C. Mitchell, was called to the fact that the mercury was away up to 85 degrees while the hall is supposed to be kept at a temperature of 68 or 70. Mr. Mitchell became "hot" at once and flew around to find the janitor to see what he meant by trying to cook the fellows in the pit. The janitor was found, but instead of getting excited he examined two other thermometers, both of which registered under 70 degrees. He then informed Mr. Mitchell that the boys had warmed the mercury in the bulb by breathing their warm breath on it until 85 degrees were reached, when the new director's attention was called to it. Mr. Mitchell enjoyed the joke with the others after he cooled off.

OBITUARY.

John Goodin, employed by the Thompson Milling Company at Lockport, N. Y., as expert wheat inspector, was run over and killed by a car March 28.

John H. Heising, who had been in the grain business with his brother in North Dakota, died recently at Albert Lea, Minn., after he had been sick a long time. He was once a grain inspector at Minneapolis.

Samuel R. Ford, dealer in malt and barley at New York City, died April 7. While going to his home in Brooklyn he fell, striking the pavement with his head and fracturing his skull. He was a member of the New York Produce Exchange.

Martin D. Stevens, a member of the Board of Trade, died at Chicago, Ill., April 5, of Bright's disease. He was born at Whitehall, N. Y., in 1831, went west to Woodstock, Ill., in 1856, and entered the grain business. Eight years later he moved to Chicago and did business on the Board of Trade until his death. He left four sons.

Hugh Young, formerly connected with the grain trade of Minneapolis and the Northwest, died at Montreal, Quebec, March 26, having been ill for a long time. By a strange coincidence his brother, John M., died in Milwaukee, Wis., just two weeks before of heart disease. He was 68 years old, and was in the grain business at Montreal.

The receipts of flaxseed at Chicago in January were 245,850 bushels, in February 172,700 bushels, in March 265,650 bushels, against 164,500 bushels, 122,500 bushels and 93,000 bushels for the same months of 1890 respectively.

NORTH DAKOTA'S WAREHOUSE LAW.

An Act to Regulate Grain Warehouses and the Weighing and Handling of Grain, and Defining the Duties of the Railroad Commissioners in Relation Thereto.

Be it Enacted, etc.,

SECTION 1. (Powers.) That the duties imposed by the provisions of this act and the powers conferred thereby devolve upon the Board of Railroad Commissioners.

SEC. 2. (To Supervise the Handling, Weighing, Grading and Storage of Grain.) That it shall be the duty of the Railroad Commissioners of the state of North Dakota to supervise the handling, weighing, grading and storage of grain and seeds; to establish all necessary rules and regulations for the weighing of grain and for the management of the public warehouses of the state, as far as such rules and regulations may be necessary to enforce the provisions of this act, or any law in this state in regard to same; to investigate all complaints of fraud or oppression in the grain trade of this state, and to correct the same as far as it may be in their power.

SEC. 3. (Printing and Publishing Rules.) The rules and regulations so established shall be printed and published by said Railroad Commissioners in such manner as to give the greatest publicity thereto, and the same shall be in force and effect until they shall have been changed or abrogated by said Commissioners in a like public manner.

SEC. 4. (Public Warehouses Defined.) All buildings, elevators or warehouses in this state, erected and operated or which may hereafter be erected and operated by any person or persons, association, co-partnership, corporation or trust for the purpose of buying, selling, storing, shipping or handling grain for profit, are hereby declared public warehouses, and the person or persons, association, co-partnership or trust owning or operating said building or buildings, elevator or elevators, warehouse or warehouses which are now or may hereafter be located or doing business within this state, as above described whether said owners or operators reside within this state or not, are public warehousemen within the meaning of this act and none of the provisions of this act shall be construed so as to permit discrimination with reference to the buying, receiving and handling of grain of standard grades, or in regard to parties offering such grain for sale, storage or handling at such public warehouses, while the same are in operation.

SEC. 5. (Bond.) That the proprietor, lessee or manager of any public warehouse or elevator in this state shall file with the Railroad Commissioners of the state a bond to the state of North Dakota, with good and sufficient securities, to be approved by said Commissioners of Railroads, in the penal sum of not less than five thousand (\$5,000) nor more than seventy-five (\$75,000), in the discretion of said Commissioners, conditioned for the faithful performance of duty as public warehousemen and a compliance with all the laws of this state in relation thereto. One bond only need be given for any line or lines of elevators or warehouses owned, controlled or operated by one individual, firm or corporation or trust, said bond specifying the location of each elevator, or warehouse operated by said individual, firm or corporation or trust, and be in sufficient amount, at the discretion of the Commissioners aforesaid, to protect holders of outstanding tickets.

SEC. 6. (Warehouse Receipts—What to Contain.) All owners of such elevators and warehouses shall, upon the request of any person delivering grain at such warehouse, give a warehouse receipt therefor, subject to the owner or consignee, which receipt shall bear date corresponding with the receipt of the grain, and shall state upon its face the quantity and grade fixed upon the same. All warehouse receipts issued for grain received shall be consecutively numbered, and no two receipts bearing the same number and series shall be issued during the same year. No warehouse receipt shall be issued except upon actual delivery of grain in such warehouse. No such warehouseman shall insert in any warehouse receipt issued by him any language in anywise limiting or modifying his liability as imposed by the laws of this state.

SEC. 7. (What Storage Receipts Shall Express.) Any storage receipt issued within the boundaries of this state shall provide by express agreement that at the option of the original holder of such receipt the kind, quality and quantity of grain for which such receipt was issued shall be delivered back to him at the same place where it was received, upon the payment of a reasonable charge per bushel for receiving, handling, storing and insurance charges, such charges to be fixed by express terms in the storage receipt at the time of receiving the grain at the elevator or warehouse, and at the time of issuing the receipt; *Provided*, That no charges shall be made for cleaning grain unless such grain has been actually cleaned; *Provided further*, Nothing in this section shall be construed to mean the delivery of the identical grain specified in the receipt so presented; but an equal amount of the same grade, excepting in case of wheat placed in special bin.

SEC. 8. (Bailment Not a Sale—Insolvency.) Whenever any grain shall be delivered to any person, association, firm, corporation or trust, doing a grain, warehouse or grain elevator business in this state, and the receipts issued therefor, providing for the delivery of a like amount and grade to the holder thereof in return, such delivery shall be a bailment, and not a sale of the grain so delivered; and in no case shall the grain so stored be liable to seizure upon process of any court in action against such bailee, except actions by owners of such warehouse receipts to enforce the terms of the same, but

such grain shall at any and all times, in the event of the failure or insolvency of such bailee, be first applied exclusively to the redemption of outstanding warehouse receipts for grain so stored with such bailee. And in such event grain on hand in any particular elevator or warehouse shall first be applied to the redemption and satisfactions of receipts issued from such warehouse.

SEC. 9. (Larceny—Punishment.) Every person and every member of any association, firm, trust or corporation doing a grain, warehouse or grain elevator business in this state, who shall after demand, tender and offer as provided in Section 8 of this act, willfully neglect or refuse to deliver, as provided by said Section 8, to the person making such demand, the full amount of grain or the grade or market value thereof which such person is entitled to demand of such bailee, shall be deemed guilty of larceny and shall, on conviction thereof, be punished by a fine or imprisonment or both, as is prescribed by law for the punishment of larceny.

SEC. 10. (Attorney General—States' Attorney.) The Attorney General of the state shall be ex-officio attorney for the Railroad Commissioners and shall give them such counsel and advice as they may from time to time require, and he shall institute and prosecute any and all suits which said Railroad Commissioners may deem expedient and proper to institute, and he shall render to such Railroad Commissioners all counsel, advice and assistance necessary to carry out the provisions of this act or any law which said commissioners are required to enforce according to the true intent and meaning thereof. In all criminal prosecutions against a warehouseman for a violation of any of the provisions of this act, it shall be the duty of the state's attorney of the county in which such prosecution is brought to prosecute the same to a final issue.

SEC. 11. (Rates to be Established and Maintained.) The charges for storage and hauling (handling) grain shall not be greater than the following schedule: For receiving, elevating, insuring, delivering and twenty days' storage, two (2) cents per bushel. Storage rates after the first twenty days, one-half (½) cent for each fifteen days or fraction thereof, and shall not exceed five (5) cents for six months. The grain shall be kept insured at the expense of the warehousemen for the benefit of the owner.

SEC. 12. (Penalty for the Violation of the Provisions of this Act.) That any person, association, firm, trust or corporation, or any representative thereof, who shall knowingly cheat or falsely weigh any wheat or other agricultural products, or who shall violate the provisions of any section of this act, or shall do or perform any act or thing therein forbidden, or shall fail to do and keep the requirements as herein provided, shall be deemed guilty of a misdemeanor and shall, on conviction thereof, be subjected to a fine not less than two hundred (\$200) dollars nor more than one thousand (\$1,000), and be liable in addition thereto to imprisonment for not more than one year in the state penitentiary, at the discretion of the court.

SEC. 13. (Repeal.) Chapter 130, passed by the Seventeenth Legislative Assembly of the Territory of Dakota, approved March —, 1887, and Chapter 187 and Chapter 138 of the laws of 1890, and Chapter 62, passed by the Eighteenth Legislative Assembly of the Territory of Dakota, approved March 8, 1899, and all other acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 14. (Emergency Clause.) That, whereas, an emergency exists in that there is at present no code of intelligible warehouse laws upon the statute books of North Dakota, therefore this law shall be in force and effect from and after its passage and approval.

Approved March 7, 1891.

PERSONAL

O. F. Ostram, president of the Inter-State Grain Company at Minneapolis, Minn., recently started on a tour to Europe.

C. F. Rockwell has entered the employ of Spann & Chandler, barley dealers of Buffalo, N. Y., as agent for their grain department.

Denison B. Smith, secretary of the Toledo Produce Exchange, was a candidate for the mayor's office on the Citizens' ticket. He was nominated by the citizens' committee of one hundred.

To POULTRY RAISERS.

The Complete Poultry Manual is a neat little work which is well worth reading by those interested in poultry, or by boys or girls who want to turn an honest penny. The price is only 25 cents. Sent postpaid on receipt of price. Address

MITCHELL BROS. CO.,

184 Dearborn Street, Chicago, Ill.

Miscellaneous * * * * Notices.

LOCATION WANTED.

A good grain location wanted. Will buy or lease elevator property. Give particulars and address
E. D. VORHES, Cushing, Ia.

ELEVATOR WANTED.

Would rent or lease an elevator or would run one on shares. Must be in good grain section. Address
B. & M., care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

POSITION WANTED.

A situation in elevator, grain warehouse or mill as weigher or grain buyer, on street or road, is desired by one who is a good judge of all grain. Address
EUGENE W. VIRGIN, Long Pine, Neb.

PARTNER WANTED.

Wanted—silent or active partner in flourishing city grain trade with forty to fifty thousand dollars capital. Full showing will be made to acceptable party. Address
G. A. BLAKE, Kansas City, Mo.

POSITION WANTED.

A position as grain buyer or elevator manager wanted. Have had fifteen years' experience buying and handling grain in Nebraska and Kansas. First-class references as to character and ability, among them one of the leading firms of the Chicago Board of Trade. Address
G. H., care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

POSITION AS BUYER.

A position as traveling buyer and solicitor for some good grain firm, is desired by a man with experience who can furnish best of references and bonds if necessary. Have three years' experience in Michigan buying on the street when competition was strong and where the grain was graded very closely. I also bought for two large roller mills, and have A No. 1 credentials from both firms. I have owned and operated a steam elevator. I have had a year's experience in the Palouse Valley of Washington buying grain for the N. P. E. Company. Will work on fair salary or good commission until I get myself established and work up a good business. Prefer a steady position of this kind to buying for a company a few months and then have to go at something else. I am thoroughly posted on grain and produce. Am not afraid of hard work and like to rustle. Address
M. GRAHAM, care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

FOR SALE.

FOR SALE CHEAP.

Three No. 8 Excelsior Oat Clippers in good repair. Address
OAT CLIPPER, care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

EUREKA GRAIN SEPARATORS.

Two No. 8 Eureka Grain Separators in first class condition and about as good as new, for sale cheap. Address
INTER-STATE GRAIN CO., Minneapolis, Minn.

FOR SALE.

A steam elevator of 10,000 bushels' capacity in Kansas in the Arkansas Valley. Only elevator in the place, and in first-class order. Three railroads. For further information address
J. C. RUNGE & Co., Mulvane, Sumner Co., Kan.

SECOND-HAND MACHINES.

I have for sale the following machines in good order: One Clutch; one No. 2½ Barnard & Leas Separator; one No. O Band and one No. G Nonpareil Feed Mills; one No. 2 Magic Feed Mill; one No. New 4½ Scientific Feed Mill; one No. 2 Morgan Scourer; one ½-in. Crown Water Meter; two 5 ft. by 32 in. hexagon scalping reels, and one double 6 ft. 6 in. by 30 in. hexagon scalping reel, etc. Address
WM. SESSINGHAUS, 1444 St. Louis avenue, St. Louis, Mo.

SECOND HAND MACHINERY.

Will sell thirty-one feet of 12-inch and sixty feet of 9-inch nearly new iron conveyor with boxes; also two oat clippers and one double steam shovel partly damaged by fire. Address
J. G., care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

POWER PLANT FOR SALE.

Will sell the following at a low figure, as I have no use for it: One Ames 20-foot, 32 flue, 10-horse power Steel Boiler, together with inspirator, steam gauge, 34-foot stack, ready to set up for use. In use five months, just as good as new. Reason for selling, am putting in more power. Address
T. E. MALDEN, Manson, Ia.

ELEVATOR MACHINERY.

I will sell the following described machinery at 50 per cent. below first cost: One 10-horse power portable engine almost as good as new, made by Woodson & Tenney of Dayton, O.; one No. 4 Warehouse corn sheller and cleaner combined, in good order, made by the Union Iron Works of Decatur, Ill.; one 5-ton hay scale, as good as new, and one set of head and boot elevator pulleys, 22x6 inches, and journal to boot pulley and shaft and driving to head. Address
I. K. HOSTETTER, Osborn, O.

FOR SALE OR RENT.

A horse power elevator of 20,000 bushels' capacity, in the best hard wheat territory in Minnesota, on the Fargo & Southern Railroad. I will sell outright or rent for a term of years, or I will handle grain for parties for so much per bushel. I have the J. Leas Patent Self-Operating Grain Cleaner to clean wheat direct from farmers' wagons, before the wheat is weighed, and clean as fast as farmers can unload from wagons. This machine is operated by the weight of the grain. For further information address
JOSEPH LEASER, Dumont, Traverse Co., Minn.

ELEVATOR AND MILL.

I will sell my warehouse, elevator and mill in this city, being compelled to move to another climate owing to ill health. Main building 30x60 feet, corn room and boiler room 28x30 feet, basement 11 feet, first floor 10½ feet, second 7½ feet, besides space under roof. The machinery comprises a 40-horse power engine, new boiler, one set 56-inch millstones, one "Scientific" feed mill, one Geo. T. Smith Scalper, one Cranson Scourer, one Hutchison Corn Sheller, one new Howe Wagon Scale, one small scale, etc. The warehouse is on the C., C. and St. L. railways on a spur of the Big Four R. R. It is the only warehouse in the city and there is no mill on the railroad. Address
H. L. HYATT, 4 W. Winter street, Delaware, O.

FOR SALE.

FOUR GRAIN ELEVATORS

In Western Iowa on C. & N. W. R. R.

MARTIN D. STEVERS & CO.

COMMISSION MERCHANTS,

218 La Salle St., - CHICAGO.

COMMISSION CARDS.

The Henry W. Brooks Co.,

WHOLESALE

Grain, Hay, Flour, Grits, Meal & C. S. Meal.

State Agents for E. O. Stanard Milling Co.'s Royal Patent Flour, Henderson Hominy Mills, Grits and Meal.

E. F. Brooks, Manager. Jacksonville, Fla.

LEMAN BARTLETT.

O. Z. BARTLETT.

L. BARTLETT & SON,

Grain and Produce Commission Merchants

BARLEY a Specialty.

Room 23, Chamber of Commerce Bldg, Milwaukee, Wis.

Careful attention given to orders from Brewers, Malsters and Millers,

COMMISSION CARDS.

A. J. SAWYER.

JOHN MACLEOD.

A. J. SAWYER & CO.,

Duluth and Minneapolis, Minn.,

SHIPPING

AND

Grain Commission.

"THE LEADING HOUSE."

J. N. WOOLISCROFT & CO.,

Grain Merchants,

Rooms 10 and 11,

Commercial Gazette Building,

Fourth and Race Streets, CINCINNATI, OHIO.

R. R. CORDNER,

MIDDLETOWN, N. Y.,

BUYS

Corn, Oats, Feed in Bulk or Sacked, Grass Seeds, Potatoes, Apples and any salable Produce in CAR LOTS.

Freight Rate from the West is same as to New York. Correspondence from Dealers is respectfully solicited. REFERENCE: Merchants' and Manufacturers' Bank.

Established 1863.

E. L. ROGERS & CO.,

Commission Merchants,

FLOUR, GRAIN, SEED, HAY,

135 S. Second Street, - (Chamber of Commerce Building),

PHILADELPHIA, PA.

Liberal Advances made on consignments. Market reports furnished gratuitously on application. Correspondence Solicited.

REFER TO SEVENTH NATIONAL BANK OF PHILADELPHIA.

Robert McKnight & Sons,

Commission Merchants,

—AND DEALERS IN—

FLOUR, GRAIN AND FEED,

Nos. 2106 & 2108 Market St., PHILADELPHIA.

REFERENCES: Merchants' and Third National Banks, PHILADELPHIA.

O. V. ECKERT.

JAS. MC CLENAGHAN.

J. C. WILLIAMS.

ECKERT, WILLIAMS & CO.,

WHOLESALE COMMISSION

And Dealers in Corn, Oats, Flour, Mill Feed, Hay, Etc.

Liberal Advances Made on Consignments.

Office and Warehouse, 309 & 311 Lake Ave., DULUTH, MINN.

TELEPHONE 333-1.

REFERENCE: Bradstreet Mercantile Agency. State Bank of Duluth.

LYMAN, FIELD & CO.,

MILLERS--NORFOLK, VA.,

BUYERS OF WHITE CORN,

SHIPPERS

—OF—

SOUTHERN CORN for SEED and ENSILAGE.

CORRESPONDENCE SOLICITED.

COMMISSION CARDS.

ESTABLISHED IN 1870.

J. H. VANNERSON.

J. W. HILLIS.

VANNERSON & CO.,
COMMISSION MERCHANTS and BROKERS.
 Grain, Hay, Flour and Provisions.

ELEVATOR AND WAREHOUSE ON GA. R. R. TRACK.

Direct Communication with all Railroads Entering the City.

Cash Advances Made.

—REFER BY PERMISSION TO—
 Georgia Railroad Bank, Augusta, Ga.
 National Bank of Augusta, Augusta, Ga.

AUGUSTA, GA.

SHIP YOUR GRAIN TO
THE VAN DUSEN-HARRINGTON CO.,
MINNEAPOLIS,
THE VAN DUSEN-ELIOT CO.,
DULUTH,
 To Secure Highest Prices and Prompt Returns.

B. B. CONNOR & CO.,

ESTABLISHED IN 1854.

Commission Merchants,

WHOLESALE DEALERS IN

HAY, GRAIN AND MILL FEED.

Choice Hay and Oats a Specialty.

164 and 166 Fourth St., —AND— 135 and 137 Bullitt St.

LOUISVILLE, KY.**J. N. ROBSON & SON,****Commission Merchants,****MERCHANDISE BROKERS,**

136 EAST BAY, 1 and 2 ATLANTIC WHARF.

CHARLESTON, S. C.

REFERENCE:—Swift & Co., Chicago, Ill.; Washburn-Crosby Co.,
 Minneapolis; Iglehart Bros., Evansville, Ind.; Merrill Milling Co.,
 Kalamazoo, Mich. Special attention given to the sale of Flour,
 Grain and Provisions.

CRABBS & REYNOLDS,**GRAIN RECEIVERS AND SHIPPERS.**

—Also Dealers in—

FLOUR, FEED, And all Kinds of FIELD SEEDS.

Clover, Timothy, Blue Grass, Orchard Grass, Millet,
 Hungarian Seed Corn, Oats, Rye, Buckwheat,
 Oil Meal, etc.

Correspondence Solicited from Buyers and Sellers.

OFFICE AND STORE:**118 AND 120 MARKET ST**

Elevator near Monon R.R., Crawfordsville, Ind.

COMMISSION CARDS.**G. B. KIRKBRIDE & CO.,****GRAIN,****MINNEAPOLIS, - - MINN.**

Large Shippers and Receivers of All Kinds Grain.

HARD MILLING WHEAT A SPECIALTY.**A. B. TAYLOR & CO.,**

SHIPPERS OF

GRAIN AND MILL FEED,

Room 10, Chamber of Commerce,

MINNEAPOLIS, - - MINNESOTA.

Careful attention given to orders for Hard Spring
 Wheat for Milling.

CITY ELEVATOR AND WAREHOUSE,**GEORGE BECKER & CO.,****M. B. Beville, Mgr. Proprietors.**

Receivers, Shippers and Dealers in

HAY, GRAIN, MILL FEED AND FEED MEAL.

15TH AND ROWAN STREETS,

Elevator Capacity, 25,000 Bu. Grain.
 Warehouse Capacity, 50 Cars Hay.

LOUISVILLE, KY.**MASON COUNTY, ILLINOIS**

IS NOTED FOR ITS PURE YELLOW AND WHITE
 CORN, ALSO FOR TURKEY (HARD WINTER)
 WHEAT, AND SEVERAL VARIETIES OF SOFT
 MILLING WHEATS. SEND YOUR ORDERS TO

McFADDEN & CO.,AT THE COUNTY SEAT, **HAVANA, ILL.****Grain for Seed, Feed and Milling.**

E. R. ULRICH.

E. R. ULRICH, JR.

E. R. ULRICH & SON,
Western Grain Merchants

And Shippers of Choice Milling White or Yellow Corn,
 Also Mixed Corn, White Oats, Mixed Oats and Choice Red Winter
 Milling Wheat. Elevators and Storage along the Line of Wabash
 Ry., J. S. E. Ry., Pawnee Ry., and St. L. N. & S. Ry. in Central
 Illinois.

SPRINGFIELD, - - ILLINOIS.

* ESTABLISHED 1865. *

* INCORPORATED 1886. *

SCHWARTZ BROS. COMMISSION CO.,1601, 1603 and 1605 North Broadway, **ST. LOUIS, MO.****GRAIN. GENERAL COMMISSION MERCHANTS. FLOUR.**

Liberal Cash Advances Made on Consignments.

COMMISSION CARDS.

J. J. BLACKMAN.

G. W. GARDINER.

J. J. BLACKMAN & CO.,**Commission Merchants,**

Wheat, Corn, Oats, Screenings and Corn Goods.

37 Water Street, - - NEW YORK.**F. H. PEAVEY & CO.,****MINNEAPOLIS,**Grain
and
Elevators.**MINN.**

ESTABLISHED 1866.

JOSEPH GOOD,**COMMISSION MERCHANT**For the Sale of Wheat, Corn, Rye, Barley, Oats, Hay, Mill
Feed and Seeds, Etc.

67, 68 and 69 Mitchell Building, 99 West Fourth Street,

CINCINNATI, OHIO.

Refer to National Lafayette Bank.

ESTABLISHED IN 1864.

BONNER COMMISSION CO.

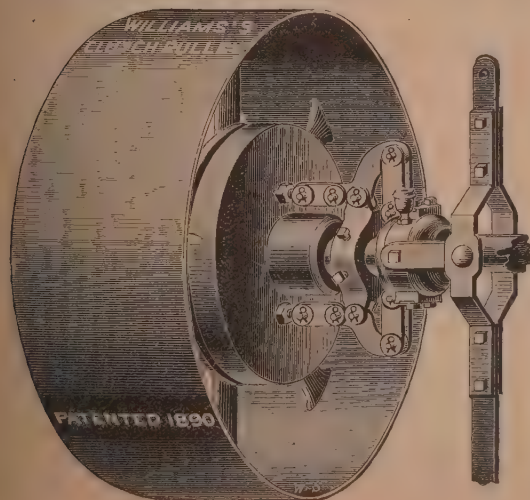
Room 316, Corn Exchange,

MINNEAPOLIS, - - MINNESOTA.

If you want any kind of Grain write us.

CHOICE SEED FLAX
C - - - AND WHEAT - -

Selected and cleaned at different stations
 in Iowa, Minnesota and Dakota in carload
 lots or less. Write for samples and terms.

ARCHER & HOWE, 457 Drake Block,
ST. PAUL, MINN.

WILLIAMS'
CLUTCH
PULLEY
 AND
COUPLING.

One firm is using 25 of them.
 Send for circular to

Milton F. Williams & Co.

1417 & 1419 N. Second St.,

ST. LOUIS, MO.**THE CLOSZ PATENT SCREENS**

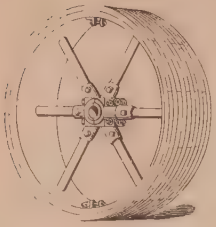
The above cut represents a section of a new and very superior screen designed for the
 coarse screening of grain—oats, barley, corn, wheat, etc.

THE CHIEF CLAIMS OF
 SUPERIORITY ARE: { 1st—Wonderful Capacity,
 2d—Great Screening Power, and
 3d—Practically Do Not Choke or Clog.

These screens are made of sizes and in styles suitable to the work. Special con-
 structions for corn which **BROKEN COBS WILL NOT CHOKO.**
 Millers, maltsters, grain dealers, threshers—all interested in cleaning grain—are
 cordially requested to apply for samples, etc., to

CHAS. CLOSZ & CO., ST. ANSGAR, IOWA.

Conveying, Elevating and Power Transmission Machinery

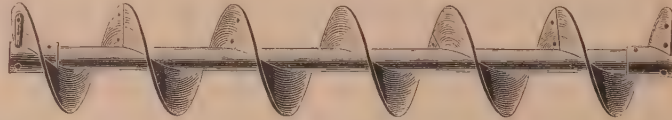


"South Bend"
Wood Split Pulleys,
With Iron Hubs
and Iron Bushings.
Will Not Slip on
Shaft. No Danger
From Fire.

H. W. CALDWELL & SON,

GENERAL MACHINISTS,

127, 129, 131, 133 WEST WASHINGTON STREET, - CHICAGO, ILL.

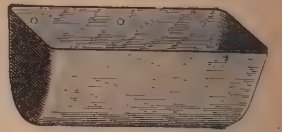


CALDWELL STEEL CONVEYOR,

AUTOMATIC POWER GRAIN SHOVELS.

LARGE AND COMPLETE STOCK FOR IMMEDIATE SHIPMENT.

SPROCKET WHEELS, LINK BELTING, COTTON, RUBBER AND LEATHER BELTING, ELEVATOR BOOTS,
BOLTS AND BUCKETS, SPOUTS, GEARING, FRICTION AND JAW CLUTCHES, HANGERS, SHAFTEING,
PILLOW BLOCKS, IRON PULLEYS, SET COLLARS, TAKE UP BOXES, TURN HEADS, PERFORATED METAL, WIRE CLOTH, ETC.



EVERY PLAIN
AND CALDWELL-AVERY
CORRUGATED
SEAMLESS STEEL
ELEVATOR
BUCKETS.



\$1.00



PUBLISHED THE FIRST DAY OF EVERY MONTH.

ESTABLISHED IN 1873.

The Best Exponent of Modern Milling.

SUBSCRIPTION PRICE,

\$1.00 PER YEAR.

Each number is worth the cost of an entire year's subscription to every man in the trade.

SEND FOR SAMPLE COPY.

ADDRESS,

\$1.50

— FOR —

B-O-T-H

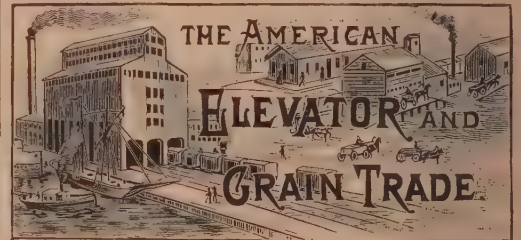
FOR ONE YEAR.

You can get such value nowhere else for your money. Many readers want a paper that comes twice a month. THE AMERICAN MILLER and THE ELEVATOR are offered at less than such a paper could be given for. You need them both in your business.

\$1.50

Two Papers a Month.

\$1.00



PUBLISHED THE FIFTEENTH OF EVERY MONTH.

ESTABLISHED IN 1882.

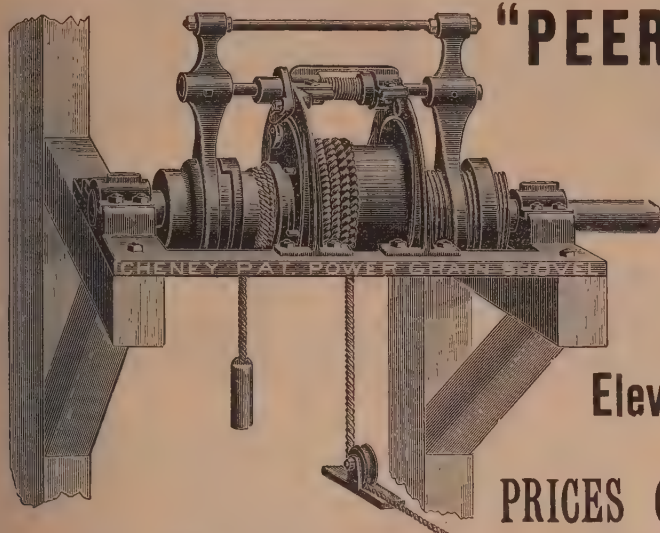
40 pages, full of interesting matter.

Every miller is more or less interested in the Grain Trade. THE AMERICAN ELEVATOR AND GRAIN TRADE is the only paper of its class in the field.

MITCHELL BROS. CO.

PUBLISHERS,

184 & 186 Dearborn St., CHICAGO, ILL.



"PEERLESS" POWER GRAIN SHOVEL

CHENEY'S PATENT.

For Unloading Grain from Cars,

—MANUFACTURED BY—

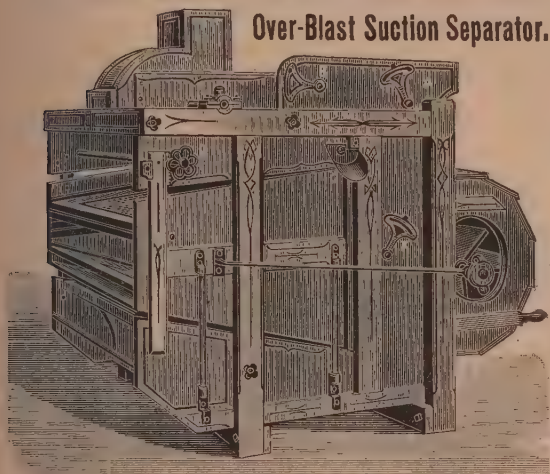
GREAT WESTERN MANUFACTURING CO.,

LEAVENWORTH, KANSAS,

MANUFACTURERS OF AND DEALERS IN

Elevator Machinery and Supplies of Every Kind.

PRICES ON APPLICATION. CORRESPONDENCE SOLICITED.



Over-Blast Suction Separator.

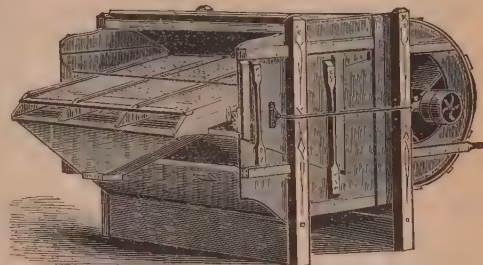
THE CELEBRATED A. P. DICKEY GIANT GRAIN CLEANERS

The Standard in Their Line.

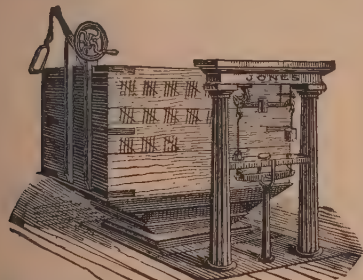
Manufactured in any desired size and pattern, with capacities to accommodate the largest Elevator and Flouring Mills, or small Warehouses for hand use. Single and Double. End and Side Shake, and Dustless Separators, both Under and Over Blast.

For Circulars and Prices address

A. P. DICKEY MFG. CO.,
RACINE, WIS.



Jones, He Pays the Freight.



HOPPER SCALES.



RAILROAD Track SCALES.

Before purchasing, send for Price List of our Standard Scales.—None better.—Fully Warranted.—All sizes made.

—ADDRESS—

Jones of Binghamton
Binghamton, N. Y.

SUBSCRIBE FOR THE
AMERICAN MILLER.

PUBLISHED BY

MITCHELL BROS. CO., Chicago.

\$1.00 PER YEAR.



SECTION OF CONVEYOR.



Roller and Detachable CHAIN BELTING

DETACHABLE in every Link.

Especially Designed for

**Elevators,
Conveyors,
Drive Belts,
Etc., Etc.**

FOR HANDLING

GRAIN, SEEDS,
EAR CORN, MALT,
COTTON SEED, COAL,
STONE, CLAY, PAPER
PULP, TAN BARK,
BOXES, BARRELS, ETC.

Before placing orders

Send for Illustrated Catalogue and Prices.

ADDRESS

THE JEFFREY MFG. CO.,

122 East First Avenue,

COLUMBUS, - - OHIO.

Heebner's Patent Level-Tread Horse-Power.
WITH SPEED REGULATOR.
For 1, 2 and 3 Horses.



LITTLE GIANT Threshing Machine.
Threshes Grain, Corn, Rice, Flax, Millet and Grass Seed. Fully Warranted. Catalogues free. Feed and Ensilage Cutters, Feed Grinders, etc.
HEEBNER & SONS, Lansdale, Pa., U. S. A.

STILWELL'S PATENT
LIME EXTRACTING

HEATER AND FILTER

COMBINED.



Is the ONLY
LIME-EXTRACTING
HEATER
that will prevent
Scale in
Steam Boilers.
Removing all im-
purities from
the water before
it enters the
Boiler.

Thoroughly Tested.

OVER 8,000
of them in daily use

This cut is a fac-
simile of the appear-
ance of a No. 5 Heat-
er at work on ordi-
nary lime water,
when the door was
removed after the
Heater had been run-
ning two weeks.
Illustrated Cata-
logues.

STILWELL & BIERCE MFG. CO.,

DAYTON, OHIO.

J. L. OWENS & Co.,

Manufacturers of

The DUSTLESS
Grain and Flax

SEPARATORS.

To clean all kinds
of Grains and Seeds,
made in different
sizes to suit differ-
ent requirements.
Send for Catalogue

with Testimonials and Prices. Address,
J. L. OWENS & CO., Minneapolis, Minn.

SEND

For Our Fifth Edition

**HOW TO SELECT,
LAY & PAINT
A TIN ROOF.**

SENT FREE OF COST.

MERCHANT & CO.

Philadelphia. Chicago.
New York. Kansas City.

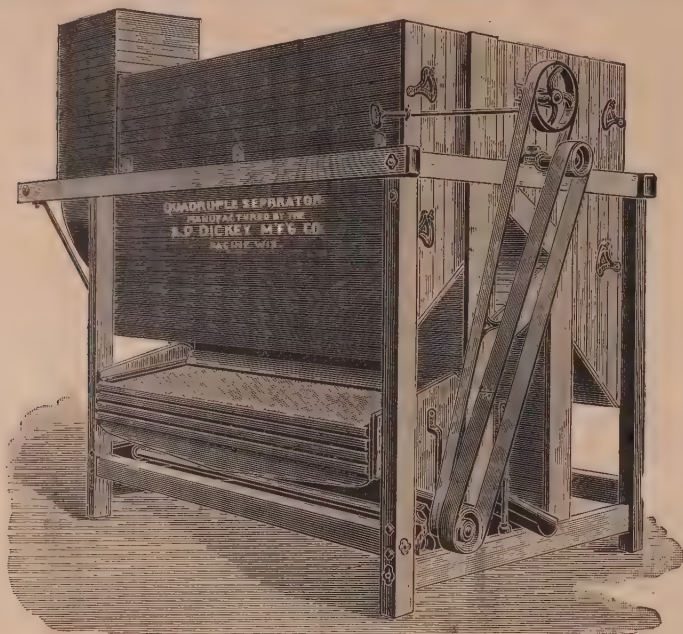
ROPER'S PRACTICAL HAND-BOOKS FOR ENGINEERS

Hand-Book of Land and Marine Engines.....	Price, \$3 50
Hand-Book of the Locomotive.....	" 2 50
Catechism of High-Pressure Steam Engines.....	" 2 00
Use and Abuse of the Steam Boiler.....	" 2 00
Engineer's Handy-Book.....	" 3 50
Questions and Answers for Engineers.....	" 3 00
Care and Management of Steam Boilers.....	" 2 00
Instructions and Suggestions for Engineers.....	" 2 00
The Young Engineer's Own Book.....	" 3 00

These books embrace all branches of Steam Engineering—Stationary, Locomotive, Fire and Marine. Any engineer who wishes to be well informed in all the duties of his calling, should provide himself with a full set. They are the only books of the kind ever published in this country, and they are so plain that any engineer or fireman that can read can easily understand them. Address

MITCHELL BROS. CO., 184 Dearborn St., CHICAGO.

"GRAIN CLEANED TO A STAND STILL."



The Quadruple Suction Dustless Separator. Four separate suction, independent of each other with sieves and screens, requiring less power, less floor space, lower in height, needing less bracing, has better and more perfect separations, and furnished with the only perfect force feed and mixer on the market. Guaranteed to clean seeds to any desired standard without waste once through this machine twice as well as any machine made.

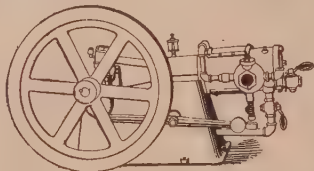
For further particulars, address

A. P. DICKEY MFG. CO., at RACINE, WIS.

REGAN VAPOR ELECTRO ENGINES.

Gas or Gasoline for Fuel. 1-2 to 10 Horse Power.

No Boiler,
No Fire,



No Flame,
No Danger.

Started by Spark From Small Battery.

Adapted to run Elevators and Feed Mills, and Guaranteed not to cost for Fuel over 2 cents per hour per Horse Power.

YOU TURN THE SWITCH—ENGINE DOES THE REST.

THOMAS KANE & COMPANY,

137 & 139 Wabash Ave., CHICAGO, ILL.

Catalogue on application.

J. C. KILNER,
President.

P. A. KILNER,
Secretary and Manager.

York Foundry & Engine Co.,

YORK, NEBRASKA.

— MANUFACTURERS AND DEALERS IN —

Mill and Elevator Supplies, Engines, Boilers, Pulleys, Shafting,
PIPE AND STEAM FITTINGS.

ALL KINDS OF CASTINGS MADE.

Machine Work, Store Fronts, Water Works Castings, Etc.

SEND FOR CATALOGUE OF MACHINERY.

SIMPSON & ROBINSON,

412 SOUTH THIRD STREET,

MINNEAPOLIS, - - MINNESOTA,

Architects and Builders

OF ALL KINDS OF

Transfer, Mixing, Cleaning, Storage, Marine and Country

ELEVATORS.

Builders during last season of Union Pacific Elevator, Kansas City, Capacity 1,000,000 bushels; Canadian Pacific Elevator, at Richford, Vt., Capacity 500,000 bushels, and 75 Country Elevators.

J. A. CAMPBELL.

CLYDE T. CAMPBELL

OVER 30 YEARS' EXPERIENCE.

J. A. CAMPBELL & SON.,

3117 N Street, LINCOLN, NEB.,

DESIGNERS AND BUILDERS OF

GRAIN ELEVATORS,

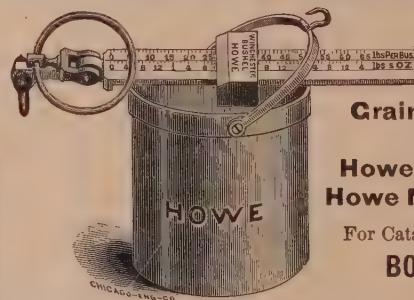
Modern in Design, Durable in Construction, and Economical and Convenient to Operate.

We use our own inventions to secure durability and convenience. Write us for full specifications and estimates and save a heavy expense in remodeling or operating a wasteful and ill-contrived elevator.

The HOWE GRAIN TESTER

— THE —

Strongest and Best Made.



Grain Samplers, Car Starters,
Howe Dump Scales,
Howe Elevator and Mill Scales,
Howe Mill and Warehouse Trucks

For Catalogue write to

BORDEN & SELLECK CO.,
48 and 50 Lake St. CHICAGO.

FRANK KAUCHER,

GRAIN ELEVATOR ARCHITECT,

A Complete Plant of Any Known Capacity Under One Contract.

410 German American Bank Bldg.,

TELEPHONE No. 225.

ST. JOSEPH, MO.

SEEDS

THE ALBERT DICKINSON CO.,
Dealers in Timothy, Clover, Flax, Hungarian, Millet, Red Top, Blue Grass, Lawn Grass, Orchard Grass, Bird Seeds, &c.
115, 117 & 119 Kinzie St. **POP CORN.**
Warehouses: 104, 106, 108 & 110 Michigan St. OFFICE, 115 KINZIE ST.
198, 200, 202 & 204 Market St. **CHICAGO, ILL.**

BARNETT & RECORD,

Architects and Builders of

GRAIN ELEVATORS

CIRCULAR AND SQUARE ELEVATORS,

For Receiving Grain in Country Towns.

TRANSFER, MIXING AND STORAGE ELEVATORS,

We issue no catalogue, but have a large assortment of plans to submit on short notice.

CORRESPONDENCE SOLICITED.

37 & 38 Corn Exchange,

MINNEAPOLIS.

460 Drake Block,

ST. PAUL.

JAMES STEWART & CO.,

ST. LOUIS, MO.,

DESIGNERS AND BUILDERS

—OF LARGE—

GRAIN ELEVATORS,

PILE DRIVING AND DOCK BUILDING

IN ANY PORTION OF THE UNITED STATES.

WE REFER BY PERMISSION TO.

UNITED ELEVATOR CO., St. Louis.

CENTRAL ELEVATOR CO., St. Louis.

J. W. KAUFFMAN MILLING CO. St. Louis

and Bethalto, Ill.

OHIO & MISSISSIPPI R. R. CO., J. F. Barnard, Pres. & Gen. Mgr., Cincinnati.

LOUISVILLE, NEW ORLEANS & TEXAS R. R. CO., James M. Edwards, Vice Pres't. and Gen. Mgr., Memphis.

MERCHANTS ELEVATOR CO., St. Louis,

E. O. STANARD MILLING CO., St. Louis, and

Alton, Ill.

BALTIMORE & OHIO R. R. CO., W. W. Peabody, Gen. Mgr. Chicago.

and Gen. Mgr., Cincinnati.

James M. Edwards, Vice Pres't. and Gen. Mgr., Memphis.

GRAIN ELEVATOR MACHINERY AND CORN MILLS.

COMPLETE OUTFITS FOR FLOUR MILLS, HOMINY MILLS AND ROLLER PROCESS CORN MILLS.

Horse Powers, Engines, Pulleys, Belting,

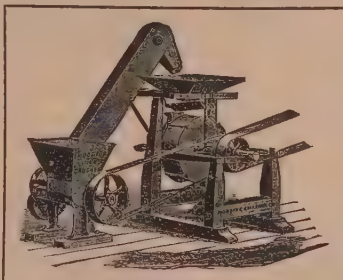
Corn and Wheat Cleaners,

Elevator Cups and Bolts,

Hominy Mills, Roller Mills,

Meal Bolts and Purifiers,

And Everything needed in the Handling and Grinding of Grain.



28 SIZES AND STYLES OF

PORTABLE CORN MILLS,

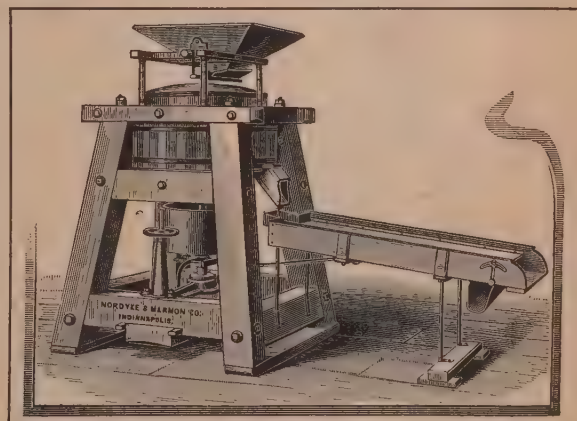
With or Without Bolts and Crushers.

Received First Premium at Cincinnati, St. Louis, New Orleans, Louisville and Indianapolis Fairs and Expositions.

BUY OUR LOW PRICED COUNTRY GRAIN ELEVATORS.

Send \$20.00 for working plans of a 5,000-bushel Grain Elevator costing \$1,000.00, complete with power and machinery, warranted to handle grain faster and cheaper than any other known device. Also, larger sizes the same ratio in price. Catalogue, with plans and full prices of machinery, sent upon application.

ADDRESS



NORDYKE & MARMON CO., - Indianapolis, Ind.



Elevator and Mill Supplies

Leather, Cotton, Rubber

BELTING

Elevator Buckets, Bolts, Mill Irons, Etc.

Prices Close, and Quality the Best.

THE CASE MFG. CO., Columbus, O.

BUY THE LEASER PATENT SELF OPERATING GRAIN CLEANER.



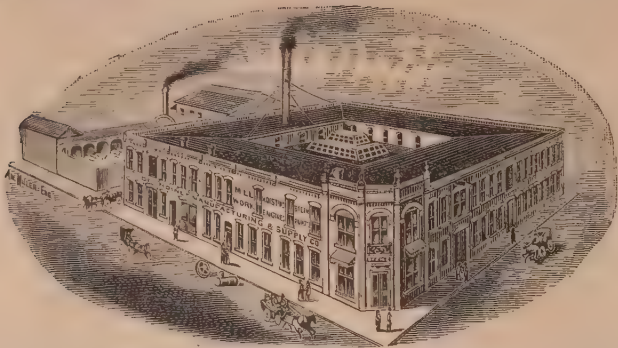
Operated by the weight of the grain. It will clean three times as fast as a fanning mill, and can be adjusted while in motion, to clean as good as desired. It need not be touched except to dump in grain. Five sieves go with each cleaner, to clean any kind of grain. Floor space 30x40 inches, five feet high. This is a farmer's size, but is especially adapted to warehouses. Price, \$30.00. I will make any size required.

Warehousemen will do well to buy one to sell to farmers as I will give exclusive right to only one man at each station to sell. Warehousemen will please paste this up in warehouse where farmers can see it.

JOSEPH LEASER, Patentee and Manufacturer, Dumont, Minn



DES MOINES MANUFACTURING & SUPPLY CO.,
MANUFACTURERS AND DEALERS IN ALL KINDS OF
ELEVATOR MACHINERY & SUPPLIES!



ENGINES AND BOILERS,
Iron Pipe Fittings and Brass Goods, Pulleys, Shafting, Elevator Buckets and Gears.

Correspondence Solicited.

Estimates Furnished for Complete Plants.

Office and Works: 101 to 121 E. Court Ave., Des Moines, Ia.

ALSO
PLAIN
ROLLED,
STEEL AND

Crimped Edge,
Corrugated and Beaded
Iron Roofing, Siding & Ceiling.

SEND FOR CATALOGUE AND PRICES.

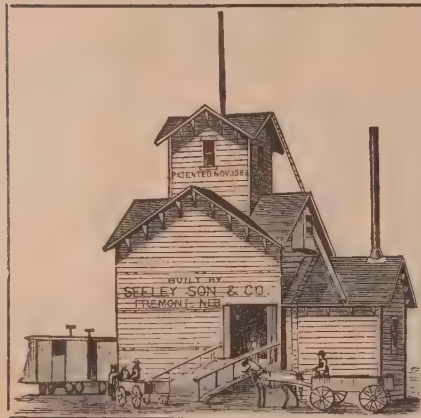


CAMBRIDGE ROOFING CO.
CAMBRIDGE
OHIO,

MANUF'RS OF
AGENTS
WANTED.

M. F. SEELEY. J. S. SEELEY. C. R. DELAMATYR

THE SEELEY ELEVATOR.



SEELEY, SON & CO.
FREMONT, NEB.
ELEVATOR BUILDERS
THE SEELEY ELEVATOR

Stands at the head for Convenience and Economy of Operation.
You cannot build a first-class modern elevator without using some of our inventions, so you had better apply to us for plans and specifications and save royalties. A large number of persons are using our appliances and may expect us to call on them for royalties in the near future.
Also furnish all kinds of Machinery, Engines, Cleaners, Corn Shellers, Belts and Buckets, etc., etc.
We build Elevators in all parts of the United States and Canada.
With our experience, we can save you on these items more than cost of Plans. Correspond with us, and save costly mistakes.

JEROME TWICHELL & CO., KANSAS CITY, MO.
CORRUGATED IRON,
Fire Proof, Lightning Proof, Cheap as Lumber.
Wire Fencing, Metal Shingles, Building Paper, Etc.
SEND FOR CATALOGUE AND MENTION THIS PAPER.



Menasha Hickory Pulleys.
We make the only hard-wood bent rim spoke arm split pulley; only small split pulley; only wooden hanger in the market. It has an iron box. Send for discounts and circulars.
MENASHA
Wood Split Pulley Co.
MENASHA, WIS.

FREE
OF
TAXES

Three \$50,000 National Banks organized by us in North Texas towns net 12 to 20 per cent. yearly, free of taxes. Rate higher, security better than big banks in cities. Local business men interested. Many stockholders East and West. Another now organizing, will do as well. STOCK PAR. For maps, circulars and details, address
City National Bank,
Wichita Falls, Texas.

WESTINGHOUSE
ENGINES

For all uses where Power is Required. - Over 6000 Running Daily in Every Part of the World!

Yearly production and sales, over 1200 engines, aggregating 80,000 horse-power.
Average sales greater than ALL other high-speed engines.
All engines built strictly to gauge, with interchangeable parts.
All engines made in quantity and carried in stock for prompt shipment.
Repairs interchangeable; made in quantity to gauge, and carried in stock for immediate shipment.
Illustrated descriptive matter furnished on application to any agent.

STANDARD AUTOMATIC	COMPOUND AUTOMATIC	JUNIOR AUTOMATIC	JUNIOR COMPOUND
Hundreds in continuous use over 2 years. 13 Sizes in Stock. 16 to 250 H. P.	Unequalled for High Fuel Duty and Simplicity. 9 Sizes in Stock. 95 to 300 H. P.	"Cheaper than a Common Slide-Valve" 17 Sizes in Stock. 16 to 75 H. P.	Simple, Strong, and Very Economical. 7 Sizes in Stock. 3 to 65 H. P.

FOREIGN & DOMESTIC SELLING DEPARTMENT

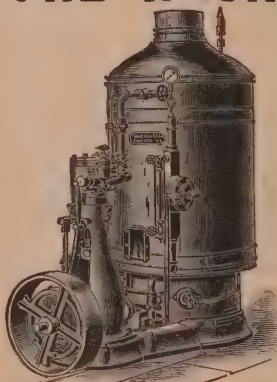
BARCELONA, SPAIN, Calle de T. Lafont 61, I. Delanoy Westinghouse, Church, Kerr & Co.	MOSCOW, RUSSIA, 17 Cortlandt Street, Westinghouse, Church, Kerr & Co.
BOSTON, MASS., 630 Atlantic Ave. Westinghouse, Church, Kerr & Co.	NEW YORK, N. Y., 17 Cortlandt Street, Westinghouse, Church, Kerr & Co.
BUTTE, MONT., East Granite St. Utah & Montana Machinery Co.	PARIS, FRANCE, 3 Rue La Fayette, R. Rogers & Co.
CHARLOTTE, N. C., 150 Lake Street, Westinghouse, Church, Kerr & Co.	PHILADELPHIA, PA., 212 Drexel Building, M. R. Mucke, Jr. & Co.
CHICAGO, ILL., 150 Lake Street, Westinghouse, Church, Kerr & Co.	PITTSBURGH, PA., Westinghouse Bldg., Westinghouse, Church, Kerr & Co.
DENVER, BRITISH GUIANA, John R. Duley	PORTLAND, OREGON, 31 & 33 N. Front St., Parks & Lacy Mch. Co.
DURANGO, MEXICO, T. F. Waterhouse	QUILIZAPANGO, GUATEMALA, Zales & Chee-man
HAMBURG, GERMANY, Bonaparte, O. Blumcke	ST. LOUIS, MO., 311 N. Fourth St., Kerr & Co.
HAVANA, CUBA, Also 17 Beaver St., N. Y. J. V. Sorensen	SALT LAKE CITY, UTAH, 250 South Main St., Utah & Montana Machinery Co.
KANSAS CITY, MO., 1222 Union Ave., Westinghouse, Church, Kerr & Co.	SAN FRANCISCO, CAL., 31 & 33 Fremont St., Parks & Lacy Co.
LIMA, PERU, Also at Park Pl., N. Y. Manuel Perez	SCHIEDAM, HOLLAND, 26-28, G. J. Vincent & Co.
MEXICO CITY, MEXICO, Calles Varjo 14, Avenida Oriente 6, Rafael H. de Arce	SPokane Falls, WASH., Bernard & Front Sts., Parks & Lacy Mch. Co.
MEXICO CITY, MEXICO, Co-operating with M. de A., Roberto Boker & Co.	SYDNEY, N. S. W., 189 Clarence St., Parks & Lacy Co.
MINNEAPOLIS, MINN., 220 Berry Block, Westinghouse, Church, Kerr & Co.	TEBEO, NOVA SCOTIA, G. G. Chambers

Applications for exclusive Agency Contracts will be considered only from those who are proficient in steam-engineing.

THE WESTINGHOUSE MACHINE COMPANY.
PITTSBURGH, PENNA. U.S. OF A.

THE BEST & CHEAPEST
BELTING
IN THE WORLD
MANUFACTURED BY
THE CHESAPEAKE BELTING CO.
BALTIMORE, MD.

THE RACINE OIL BURNING ENGINE.
FOR ELEVATORS.



We make THE ONLY OIL BURNING BOILER in the world that will permit the use of other fuel in connection with the oil.

Automatic Water and Oil Regulation.

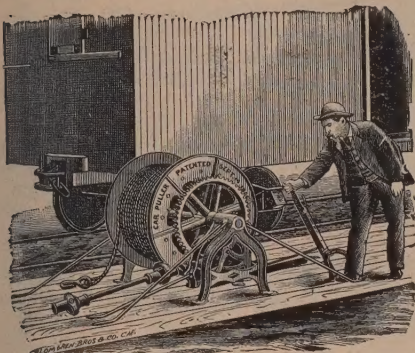
AUTOMATIC ENGINE

FROM ONE TO FIFTEEN HORSE POWER

For prices and other information, address

The Racine Hardware Manufacturing Company, Racine, Wis.

POWER CAR PULLERS

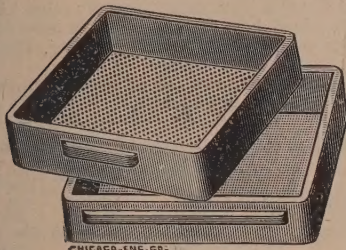


THE W. G. ADAMS POWER CAR PULLER.

COMPACT, STRONG, CHEAP.

Can be set at any angle with Driving Shaft or Rail Road Track.

HANDLES From 1 to 3 loaded cars at once, according to the conditions of the track.



GRAIN AND SEED TESTER.

The upper box fits into the lower one. The zincs or wire cloth, as the case may be, are of different perforations, or meshes, according to the work required to do. When ordering, simply state what the Testers are to be used for, whether for grain or for fine seeds, and what kind, as separate Testers are required for each. A Tester includes a pair (both sieves).

FOR HANDLING CARS

—AT—

FACTORIES,
COAL MINES,
WAREHOUSES,

GRAIN ELEVATORS,
MILLS,
MALT HOUSES,
BREWERIES

—AND—

DISTILLERIES,

Or wherever necessary to move cars without a Switch Engine. Can be set at any angle with Railroad Track.

We are Makers and Jobbers of all kinds of

MACHINERY and SUPPLIES

—FOR—

GRAIN ELEVATORS and MILLS

SUCH AS

SHAFTING, PULLEYS, HANGERS,
PILLOW-BLOCKS, CLUTCHES, COUPLINGS,
GEARS, SPROCKETS, SET COLLARS,
TAKE-UP BOXES, CRANE-SPOUTS,
LEATHER, RUBBER, COTTON and LINK BELTING.
"FLEXIBLE" and "SWIVEL" GRAIN SPOUTS.
ELEVATOR BOOTS, BUCKETS and BOLTS.
"SPIRAL" and "BELT" CONVEYORS.
"PLATFORM," "DUMP" and "HOPPER" SCALES.
GRAIN SCOOPS, and POWER GRAIN SHOVELS.

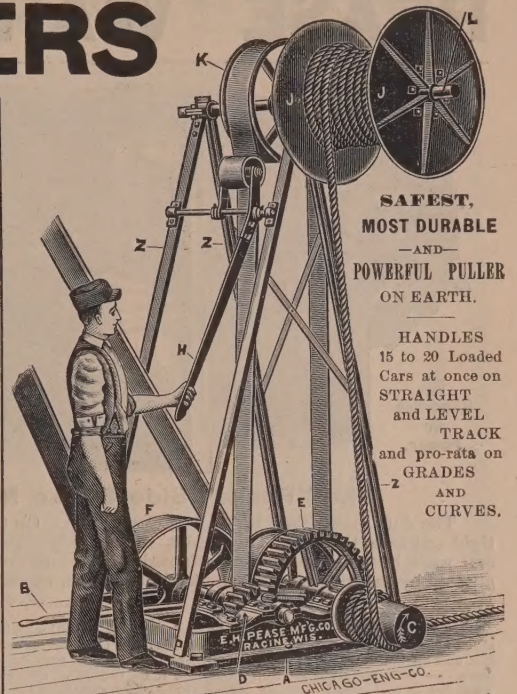
—ALL SIZES OF—

Farm and Warehouse Fanning Mills,
GRAIN TESTERS, SEED TESTERS,
PERFORATED METALS, WIRE CLOTH.

Power Car Pullers, Oat Clippers, Dust-
less Receiving Separators,

POLISHERS, SEPARATORS, GRADERS,
FLAX REELS and SPECIAL FLAX MILLS,
"OVERHEAD," "SWEEP" and "TREAD" HORSE POWERS.
BAG-TRUCKS, SIX-WHEEL WAREHOUSE TRUCKS.

—AND—

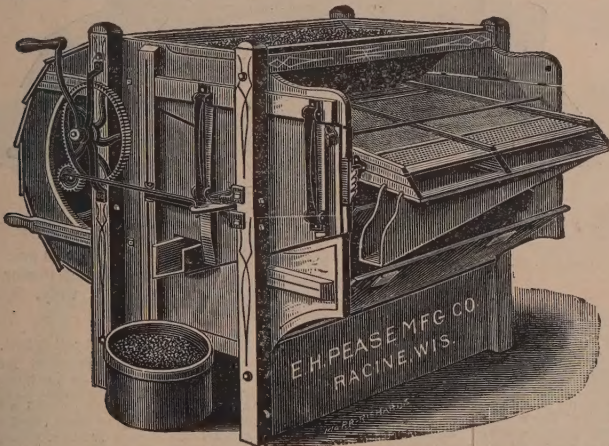


"HERCULES" POWER CAR PULLER.

FOR HEAVY WORK. IN USE BY

Columbia El. Co. Chicago—1 machine
Wright & Hill, Linseed Oil Works. Chicago—1 machine.
J. A. McLennan, (El. Cont'r & Builder) Chicago—11 machines.
W. L. Luce's Elevator. So. Elmhurst, Ill.—1 machine.
H. Mueller & Co. Chicago—1 machine.
Soo R'y Co.'s El. Gladstone, Mich.—1 machine.
P. & W. R'y Co.'s El. Painesville, Ohio—2 machines.
A. T. & S. P. R'y Co.'s El. Kansas City, Mo.—2 machines.
Barnett & Record, Minneapolis, Minn.—10 machines
El. Cont'rs & Builders }
Watrous Engine Works. Minneapolis, Minn.—1 machine.
C. A. Pillsbury & Co. Minneapolis, Minn.—2 machines.
Interior El. Co. Minneapolis, Minn.—1 machine.
City El. Co. Minneapolis, Minn.—2 machines.
St. Anthony El. Co. Minneapolis, Minn.—1 machine.
S. S. Cargill's El. Minneapolis, Minn.—1 machine.
D. A. Martin's El. Minneapolis, Minn.—1 machine.
Millington W. Sand Co. Millington, Ill.—1 machine.
Hogan & Neilson. Seneca, Ill.—1 machine.
AND MANY OTHERS.

SPECIAL FLAX CLEANING MACHINERY.



THE "PEASE" SPECIAL FLAX MILL.

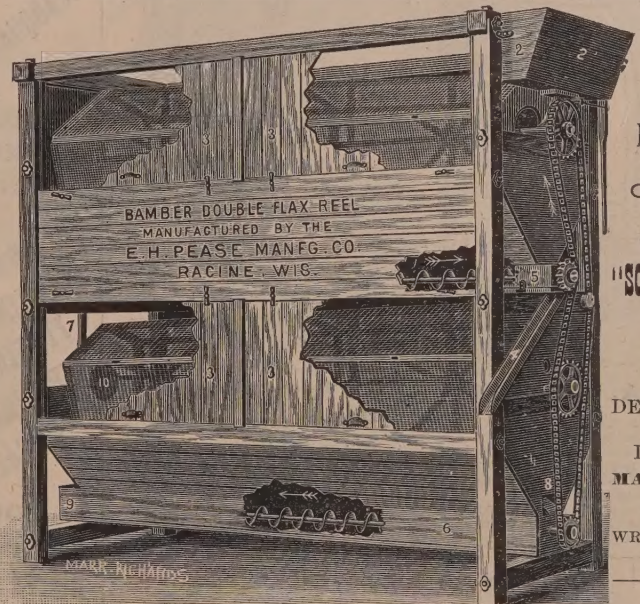
FOR HAND USE OR POWER.

This Mill is represented with a Grain Hurdle in the Shoe, to show that although especially adapted to Flax-Seed Cleaning, it can also be used for all kinds of Grain, making it a universal mill, calculated for all kinds of work. This mill is built upon the same principle as our Side Shake Warehouse Mills, but with more depth of the shoe, in order to accommodate deeper Sieves and a flax screen extending to the extreme front of the mill, a length of four feet. It consequently has greater capacity than any ordinary mill in existence. No flax hurdles are used, as separate sieves work better on flaxseed, and afford opportunities for changing the combinations for different classes of work. This mill is equally well adapted to cleaning, separating and screening Timothy, Clover, and other fine seeds.

NOTE—The No. 0 and No. 00 machines are not fitted to run by hand power.

	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.
Size over all....	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 5 ft.	5 ft. 7 in. x 6 ft.
Fltoco. of pulley	27 in.	27 in.	27 in.	27 in.
Driving pulleys..	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Rev. per minute.	275	275	275	275
Size of Sieves..	3 ft. 2 in. x 33 in.	4 ft. x 33 in.	5 ft. x 33 in.	6 ft. x 33 in.
Depth of screw.	4 ft.	4 ft.	4 ft.	4 ft.
Capacity per h'r.	25 to 35 bu.	35 to 45 bu.	45 to 60 bu.	60 to 75 bu.

STRAIGHT OR TAPERED
HAND REELS OF ANY DIMENSIONS
DESIRED, MADE TO ORDER.



MADE
WITH
ONE,
TWO or
FOUR

REELS

IN A
CHEST

AND

with or without

"SCALPING-SHOE"

REELS

OF ANY

DESIRED STYLE

OR

DIMENSIONS

MADE TO ORDER

WRITE FOR
PARTICULARS.

Two feet of capacity length for each lineal foot of machine.

Tapered, Hexagon Reels, Revolving on Horizontal Shafts.

All Sprocket Wheels and Drive Chain run perpendicular and Parallel with each other.

The lightest running, best made, most durable reels in the market.

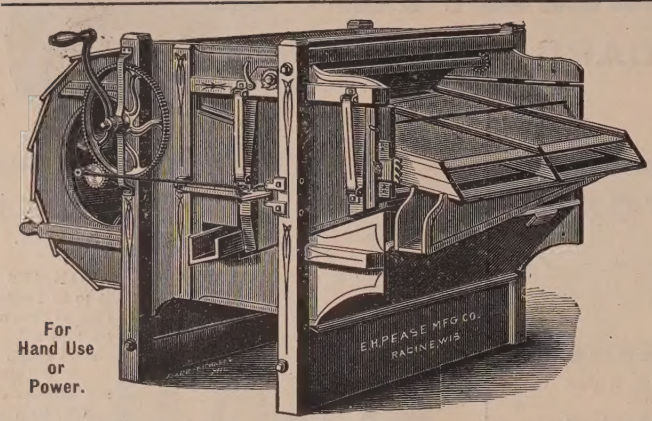
—MACHINES RECENTLY SOLD TO—

The Albert Dickinson Seed Co. Chicago.
W. C. Luce So. Elmhurst, Ill., (4 machines.)
Cargill Bros. La Crosse, Wis.
Inter-State Grain Co. Delwin, Ia.
McMichael & Son. McGregor, Ia.
J. C. Sanborn & Son. Ortonville, Minn.
Boor & Benjamin. Ashton, Ia.
Clark Bros. Manson, Ia.
D. C. Fairbanks. Dodge Center, Minn.
Clausen Bros. Cedar Lake, Ia.
AND MANY OTHERS.

E. H. PEASE MFG. CO., RACINE, WIS., U. S. A.

SEE PAGES 290, 291 AND SECOND COVER PAGE.

PEASE WAREHOUSE FANNING MILLS.



The "Pease" Side Shake Mills.

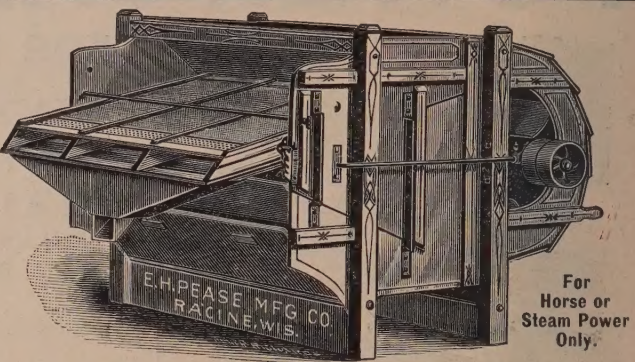
The Cut shows the "Right," or Crank side. On the opposite side are tight and loose Pulleys. These mills are not only a first-class mill for general work but are also specially adapted for all kinds of seed cleaning as is attested by the following unsolicited letter, which we publish by permission:

ST. CHARLES, MINN., April 12, 1890.
E. H. PEASE MFG. CO., Racine, Wis.:
Gentlemen:—We have started the No. 2 Mill which we bought from you a short time ago. We find it to be the best Timothy Cleaner we ever saw. It cleans very fast and does fine work. It is far ahead of the — mill for cleaning timothy. We also use a — mill but it does not come up with the No. 2 side shake we bought of you. Your No. 2 will clean timothy about three times as fast as the — mill does and does better work than the — does. Your mill is well built and strong. We would not give our No. 2 "Pease" Side Shake for any two — that we ever saw.
Very truly,
J. B. ZECHES & CO.

NOTE—The No. 0 machine is not fitted to run by hand power.

	No. 3.	No. 2.	No. 1.	No. 0.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all.....	5 ft 2 in x 3 ft 4 in	5 ft. 2 in. x 4 ft.	5 ft 2 in x 4 ft 9 in	5 ft 2 in x 5 ft 9 in
Floor to center of pulley.....	25½ in.	25½ in.	25½ in.	25½ in.
Driving pulley.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.
Revolutions per minute.....	275	275	275	275
Size of hurdles.....	2 ft. 6 in. x 24 in.	3 ft. 2 in x 24 in.	4 ft. x 24 in.	5 ft. x 24 in.
Capacity per hour.....	100 to 200 bu.	125 to 250 bu.	175 to 350 bu.	250 to 450 bu.

HAVE
THE
LARGEST
SALES
OF
ANY
MADE
IN
THE
UNITED
STATES

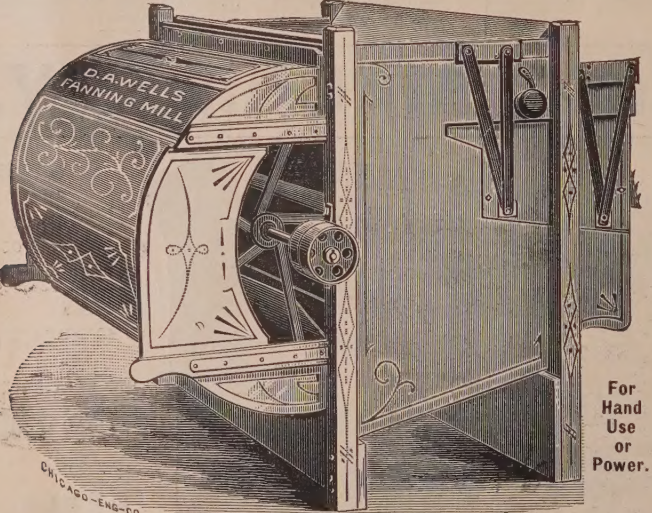


The "Pease" End Shake Mills.

Particularly adapted for use in Horse Power Elevators where power is limited and close cleaning and grading desired. It is strong, durable and noiseless.
The shoe is supported by STEEL springs, hung from above and vibrated by flexible shake-rods with ADJUSTABLE ECCENTRICS. The shake is from front to back, instead of from side to side.
They are fitted with a patent adjustable hopper raiser, not shown in cut, which gives an even flow of grain upon the sieves.
These Mills have MUCH GREATER CAPACITY than any other kind of equal sizes. They are especially adapted for cleaning ALL KINDS OF GRAIN. The side shake Mills are better adapted for cleaning Clover, Timothy, Flax, etc.
NOTE—The pulleys are placed on the RIGHT side of mills or opposite to those showing in this cut, unless otherwise ordered.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all.....	5 ft. 9 in. x 3 ft. 3 in.	5 ft. 9 in. x 3 ft. 11 in.	5 ft. 9 in. x 4 ft. 8 in.	5 ft. 9 in. x 5 ft. 8 in.	5 ft. 9 in. x 6 ft. 8 in.
Floor to center of pulley..	25½ in.	25½ in.	25½ in.	25½ in.	25½ in.
Driving pulleys.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Revolutions per minute...	450	450	430	450	430
Size of hurdle.....	2 ft. 6 in. x 30 in.	3 ft. 2 in. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour.....	125 to 250 bu	150 to 300 bu	200 to 400 bu	250 to 500 bu	300 to 600 bu

THESE MACHINES CAN BE FURNISHED WITH SPECIAL SIEVING TO HANDLE ANY KIND OF GRAIN OR SEEDS.



The "D. A. Wells" Warehouse Fanning Mill.

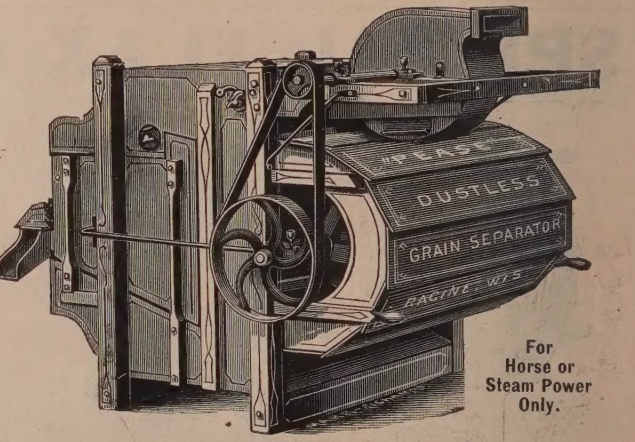
Designed for locations where power is limited and rapid cleaning is more of an object than close grading.
They have a much larger capacity than our "Pease" Warehouse Mills, but having a larger fan, do not require as high a motion and consequently require less power.
These mills are famous as corn and oat cleaners, where plain elevator work is required, and to be done rapidly.
The sieves are so arranged that they may be put in place or taken out independently, thus enabling the operator to quickly arrange any combination that may be required for the various kinds or conditions of grain to be cleaned.

Extreme height.	Size over all.	Floor to center of pulley.	Driving pulleys.	Rev. per minute.	Size of sieves.	Capacity per hour on corn or oats.	Weight.
4 ft. 1 in.	5 ft 6 in x 2 ft 6 in	2 ft. 3 in.	6 in x 2 in	140	37 in. x 26 in.	800 to 1,000 bu	425 lbs.

Office of
WM. DEACON.
E. H. PEASE MFG. CO., Racine, Wis.:
Gentlemen:—Replying to yours of recent date in which you inquire whether my old "D. W. Wells" Fanning Mill is not about worn out and if I will not require another one this season, would say:—The small piece of casting I ordered from you a few days ago to repair same, has put my mill in perfect order, with no reason in sight why it will not be running at the end of two and doing perfect work. This machine was in the Elevator when I took possession THREE years ago, and I am reliably informed has been in almost constant use here for FIFTEEN years previous to that time.
Very truly yours,
WM. DEACON.

WE
ARE
HEADQUARTERS
FOR
ALL KINDS OF
MOTIVE POWER
MACHINERY,
FITTINGS,
SUPPLIES AND
REPAIRS
FOR
GRAIN
ELEVATORS
AND
MILLS.
—O—
SEND FOR
GENERAL
CATALOGUE
AND PRICES
—TO—

The "Pease" Dustless Separators.



CHICAGO, ILL., April 8, 1891.
GENTLEMEN:—The "Pease" Dustless Separator I bought of you March 26, 1891, I sold to Wittman & Co., 66 and 68 N. Halsted St. The No. 00 Machine I bought of you January 19, 1891, I sold to F. Grimsell, 80 W. Erie St. and one I bought of you some time ago I sold to Keifer Bros., North Ave. and Halsted St. These and several others of these "Pease" Dustless Separators I have bought of you are being used chiefly for cleaning corn and oats, and any of them will clean as fast as 8x5-inch buckets, placed 12 inches apart and running at the usual speed, can elevate.
All the machines are giving good satisfaction.
Yours, etc,
R. D. HILDRETH, Millwright,
53 and 55 So. Jefferson St.

SPIRIT LAKE, IOWA, May 7, 1891.
GENTLEMEN:—Inclosed find draft to pay for the No. 00 "Pease" Dustless Separator just received from you to take the place of the Separator. Day before yesterday we put the mill in place and have been running it on some odd jobs, and the Separator works to our entire satisfaction. The Dustless Fan and Conductor works splendidly, carrying out everything I want it to, and I can put the auction on strong enough to take out grain if I desired. I can regulate the machine just as I want to, and am just more than pleased with it.
Yours truly,
D. L. RILEY.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme height.....	5 ft. 2 in.	5 ft. 2 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 3 in.
Size over all.....	5 ft 9 in x 3 ft 10 in	5 ft 9 in x 3 ft 10 in	5 ft 9 in x 3 ft 10 in	5 ft 9 in x 6 ft 7 in	5 ft 9 in x 7 ft 3 in
Height to where grain enters.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.
Floor to center of pulley..	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.
Driving pulleys.....	6 in. x 3 in.	6 in. x 3 in.	6 in. x 3 in.	6 in. x 4 in.	6 in. x 4 in.
Rev. per minute.....	450	450	450	450	450
Size of hurdles.....	2 ft. 6 in. x 3 ft. 2 in.	3 ft. 2 in. x 4 ft. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour.....	125 to 250 bu	150 to 300 bu	200 to 400 bu	250 to 400 bu	300 to 600 bu

WE ARE HEADQUARTERS

For ALL kinds of **MACHINERY AND SUPPLIES**

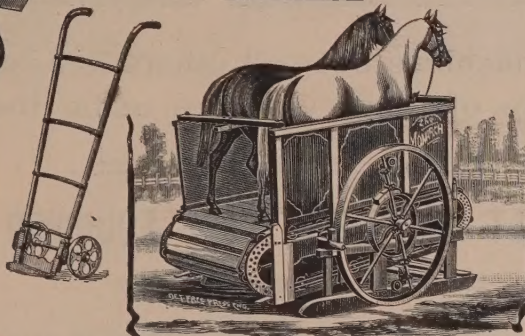
—FOR—
Grain Elevators and Mills,

SUCH AS
SHAFTING, PULLEYS, HANGERS,
PILLOW-BLOCKS, CLUTCHES, COUPLINGS,
GEARS, SPROCKETS, SET COLLARS,
TAKE-UP BOXES, CRANE SPOUTS,
LEATHER, RUBBER, COTTON AND LINK BELTING,
"FLEXIBLE" AND "SWIVEL" GRAIN SPOUTS,
ELEVATOR BOOTS, BUCKETS AND BOLTS,
"SPIRAL" AND "BELT" CONVEYORS,
"PLATFORM," "DUMP" AND "HOPPER" SCALES,
GRAIN SCOOPS AND POWER GRAIN SHOVELS.

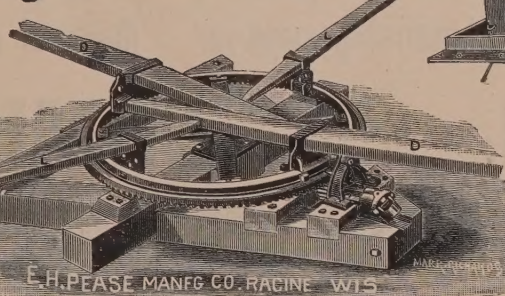
—ALL SIZES OF—

**Farm and Warehouse Fanning Mills,
GRAIN TESTERS, SEED TESTERS,
PERFORATED METALS, WIRE CLOTH,
Power Car Pullers, Oat Clippers, Dustless
Receiving Separators.**

POLISHERS, SEPARATORS, GRADERS,
CORN SHELLERS, STEAM ENGINES, FLAX REELS
AND SPECIAL FLAX MILLS, "OVERHEAD,"
"SWEEP" AND "TREAD" HORSE POWERS,
BAG-TRUCKS, SIX-WHEEL WAREHOUSE TRUCKS, ETC.



SOLE AGENTS FOR
Illinois, Wisconsin, Iowa, Minnesota,
N. & S. Dakotas, Nebraska and Kansas.



E. H. PEASE MFG. CO. RACINE WIS.



If you don't
SEE WHAT YOU
WANT,
ASK FOR IT.
We have got it.

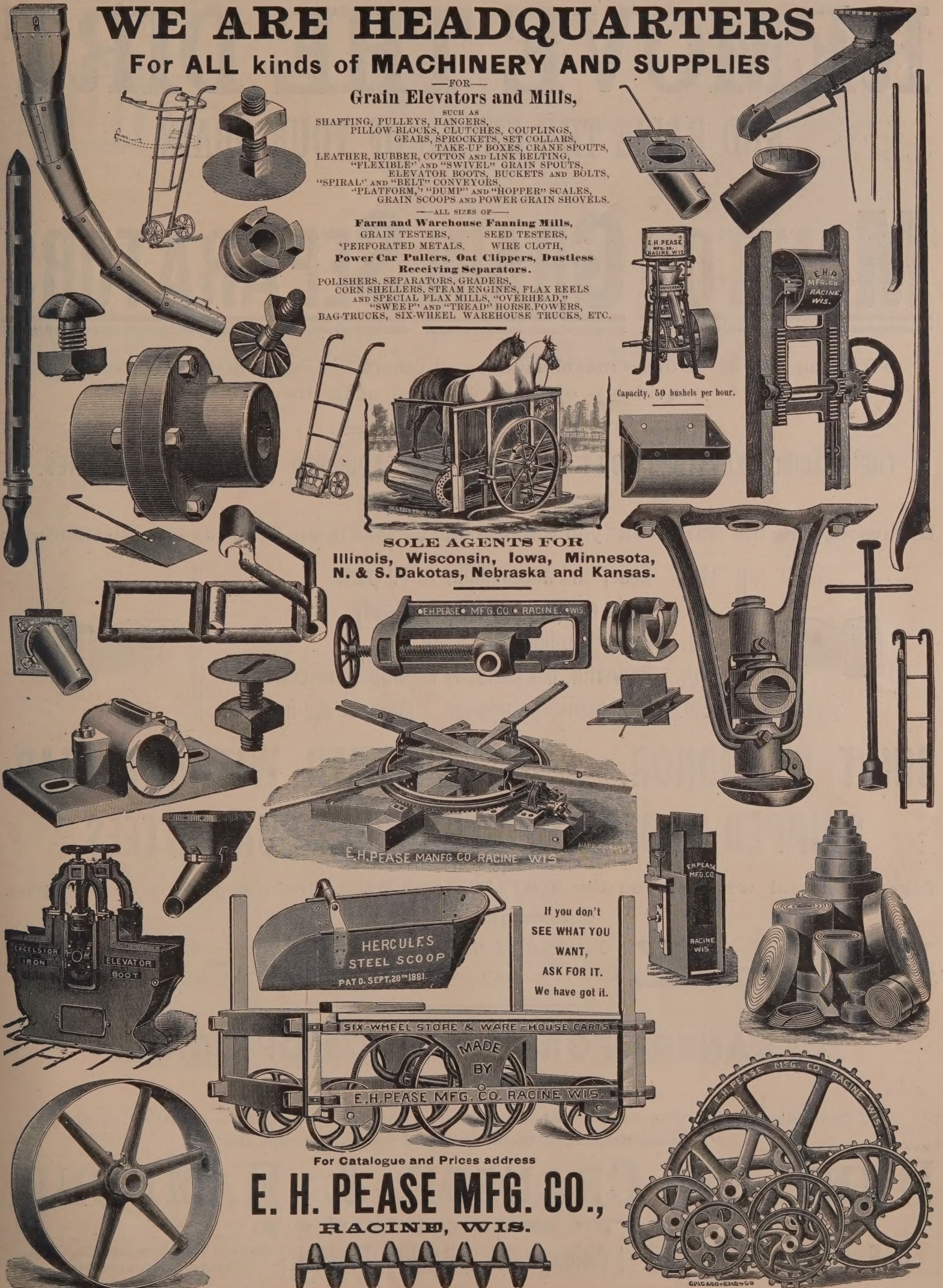


For Catalogue and Prices address

E. H. PEASE MFG. CO.,
RACINE, WIS.



SEE PAGES 289, 290 AND SECOND COVER PAGE.



REMOVE THE DIRT

AND RAISE THE GRADE OF YOUR GRAIN.

MONITOR GRAIN SEPARATORS

The superiority of these machines over all others is best demonstrated by the evidence of those who are using them.

THE LEADING ELEVATORS BUILT LAST YEAR WERE EQUIPPED WITH THESE MACHINES.

By investigating the "MONITOR" you will find that we lead in the following essential features:



- 1st. Ease, and accessibility to all parts.
- 2d. Light running.—Perfectly steady.
- 3d. Even distribution of grain.
- 4th. Powerful, but perfectly controlled air currents.
- 5th. Workmanship superior. Material the best.



BUILT ON HONOR. OFFERED WITHOUT FEAR.
SHIPPED UNDER THE STRONGEST GUARANTEES.

Taken all in all we offer you the **SIMPLEST** and **BEST** Grain Separator ever offered.

BARLEY

Our line of Barley Cleaners is very complete, and it will pay every Barley Shipper to investigate.

CLEANERS FOR ALL KINDS OF GRAIN.

A complete line of these machines can be seen and full information obtained at our
Western Branch, 63-65 South Canal Street, Chicago, Ill.

Write for Circular, Prices, Etc.

HUNTLEY, CRANSON & HAMMOND,

SILVER CREEK, N. Y., U. S. A.

B. F. RYER, { 63-65 SOUTH CANAL ST., } **Chicago, Ill.** **HENRY SIMON,** { 20 Mount Street, MANCHESTER, ENG.,
Manager Western Branch. GENERAL AGENT FOR EUROPE.